

DISTRIBUTION AGE

SEPTEMBER, 1949

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"There Must be Something Wrong Here, Boys"



And There Is if someone hasn't found the way to **CUT HANDLING COSTS IN HALF!**

Did it ever occur to you, with prices under pressure, sales declining, profits being squeezed, that your order to "Lay low on capital expenditures" actually has helped sky-rocket your costs?

Do you know that many large concerns have hit on almost a magic formula that gives quick relief from the headaches of rising costs? They found a way to **CUT HANDLING COSTS IN HALF.** *That way*, is the Automatic Electric Truck way.

These amazing electric trucks lift, move and stack your material ceiling-high with easy, finger-tip operation . . . hundreds of pounds, or tons. One operator handles more material than three workers could by antiquated manual handling methods, releasing two men for more productive work.

So, when your cost figures call for a showdown, instead of saying: "There must be something wrong here, boys", consider *how much* Automatic's 50% saving in handling costs could change your top-heavy costs picture.

And has it ever occurred to you, that your competitor can *undersell* you because he enjoys a large saving using Automatic Electric Trucks? Saleswise, for every \$5,000.00 saved in cutting handling costs, you earn the equivalent of a 5% profit on \$100,000.00 worth of sales!

Mail the coupon for all the facts . . . and then you'll see why Automatic equipment is *not* a capital expenditure, but a money-making, cost-cutting *bonus*, every time you handle material!

Automatic
ELECTRIC TRUCKS

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LIFE'S LOADS

Transporter
A PRODUCT OF AUTOMATIC

Lighten
LIFE'S LOADS

Trade **Automatic** Mark

115 W. 87th St., Dept. P-9, Chicago 20, Illinois
Please send me complete money-saving facts on amazing Automatic Electric Trucks without obligation.

Company name.....

By.....Position.....

Street Address.....

City.....Zone.....State.....



**HANDLING
180 TONS PER DAY
A BAKER TRUCK CAN
SAVE \$59.51**

● Handling conditions vary for each particular plant. Your own problem should be presented to an experienced material handling engineer. However, the following example outlines a simple method for determining the savings possible with an electric industrial truck. Let us assume a hypothetical plant with the simple problem of transporting daily 180 tons of material 200 feet from stockrooms to processing machines. Without power trucks this would require 10 truckers, each making 10 round trips per hour, or 80 trips per day, carrying 450 lbs. of material per load.

TABLE I—Handling Costs Without Electric Truck

Based on 180 tons per day	Cost per day	Cost per ton
Labor (85¢ per hour)	\$68.00	\$0.378
Social Security Taxes	2.72	0.015
Workmen's Compensation	1.00	0.006
Hand Truck Depreciation	0.30	0.002
Total	\$72.02	\$0.401

In order to mechanize handling operations, the following equipment would be required:

TABLE II—Cost of Equipment for Mechanizing

Fork Lift Truck 2000-lb. capacity	\$4,100.00
Battery	600.00
Charging Equipment	840.00
200 pallets	700.00
Total	\$6,240.00

The truck, handling one-ton pallet loads of material, making 24 round trips per hour, could transport the 180 tons in 7½ hours.

TABLE III—Annual Expense—Truck Operation

Depreciation—Truck at 10%	\$410.00
Battery at 20%	120.00
Charging equipment at 6½%	56.00
Pallets at 20%	140.00
Tires	100.00
Repair and Maintenance—Truck	164.00
Battery	24.00
Charging Equipment	33.60
Replacement of damaged pallets	70.00
Electricity	82.00
Insurance	10.00
Total annual expense	\$1,209.60
Expense per day	4.03

TABLE IV—Handling Costs—With Electric Truck

Based on 180 tons per day	Cost per day	Cost per ton
Labor (Driver—\$1 per hour)	\$8.00	\$0.044
Social Security Taxes	0.32	0.002
Workmen's Compensation	0.16	0.001
Truck Expense	4.03	0.022
Total	\$12.51	\$0.069

TABLE V—Savings With Electric Truck

Savings Per Ton	\$ 0.332
Savings Per Day (Handling 180 tons)	59.51
Savings Per Year (300 days)	17,853.00
Per cent Reduction in handling costs	83%
Annual earnings on investment	286%

While this example is obviously oversimplified, Baker Material Handling Engineers are prepared to show you how similar savings can be made on handling operations in your plant.

COST OF MATERIAL HANDLING

Per ton—based on 180 tons per day

EQUIPMENT
0.24

In addition to these savings, Baker Trucks reduce warehouse rental charges by tiering, contribute to plant safety, speed production and material movement, and perform many other operations that reduce plant overhead.



WITHOUT TRUCK



TRUCK
COSTS
2.24



LABOR
COSTS
4.74

WITH BAKER TRUCK

BAKER INDUSTRIAL TRUCK DIVISION

of The Baker-Raulang Company

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In Canada: Railway and Power Engineering Corporation, Ltd.

Baker INDUSTRIAL TRUCKS

MOVERS

BUY DODGE - save money

SAVE . . . with these many money-saving features

ENGINES . . . of famous Dodge L-head design save gas, oil, service expense. Full-pressure lubrication, full-length cylinder cooling, and replaceable prefitted main bearings reduce upkeep, prolong life.

CHASSIS . . . Super-friction clutches, with extra large frictional area; rugged 3-, 4- and 5-speed transmissions; full-floating, hypoid rear axles give better performance, insure longer life. Cross-type steering permits sharper turning, easier handling. Cyclebonded brake linings (no rivets) insure safer stops, prolong lining wear.

CABS . . . Adjustable "Air-O-Ride" seats. Roomy, wide-vision "Pilot-House" cabs, with rear quarter windows, extra-wide seats and "All-Weather" ventilation, insure maximum vision, comfort and safety.



You save money when you buy Dodge "Job-Rated" trucks!

There are two reasons for this:

1. Your truck has more money-saving features than any other make of truck built. Many of these are *exclusive* Dodge features.
2. Your "Job-Rated" truck is built to fit its job. And trucks that fit the job save on operating costs. They last longer!

Read (at left) a partial list of Dodge truck features that are important to you. Then—see your Dodge dealer for *all* the reasons why a Dodge "Job-Rated" truck (priced with the lowest) is the best truck investment you can make.

Priced with the lowest



For the good of your business—

Switch to **DODGE**
"Job-Rated" **TRUCKS**

FRONT COVER

This month's cover shows a market analyst making his report to various members of management, including the sales manager and traffic manager. These men, working together, help expand and make more profitable the sales areas and thus keep the gears of production whirling. Photo by Ewing Galloway.



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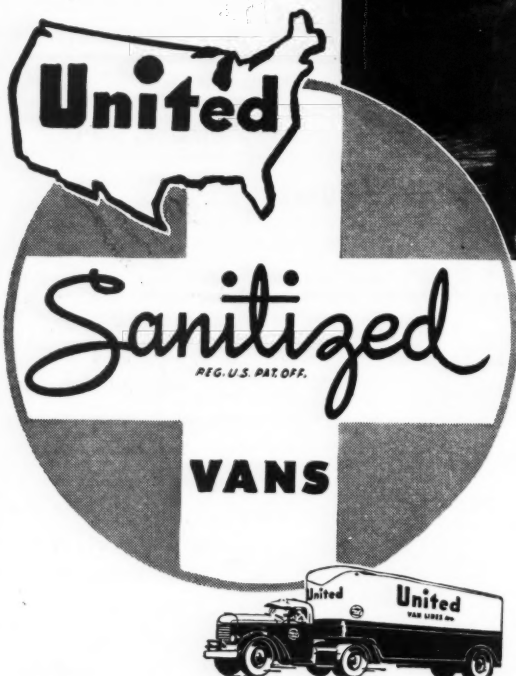
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STATEMENT OF POLICY . . . Our policy is based on the premise that distribution embraces all activities incident to the movement of goods in commerce. If distribution is to be made more efficient and economical, we believe business management must consider more than sales, because more than sales are involved. Marketing, while vital, is one phase only of distribution; seven other practical activities not only are necessary but condition marketing costs. Most commodities require handling, packing, transportation, warehousing, financing, insurance, and service and maintenance of one kind or another before, during or after marketing. We regard all of those activities as essential parts of distribution. Hence, the policy of DISTRIBUTION AGE is to give its readers sound ideas and factual information on methods and practices that will help them to improve and simplify their operations and to standardize and reduce their costs in all phases of distribution.



For Cleaner, Safer Long-Distance Moving

Now, THERE's one more important extra detail that United Van Lines "Pre-Planned" moving service takes care of when they transfer household goods, office and plant equipment for you.

That's the extra hygienic protection of the *"Sanitized" process which United Van Lines, and *only* United, uses exclusively in the moving industry. *"Sanitized" is sprayed regularly on United pads and moving equipment to check development of germs, mold, insects, etc., to insure a *cleaner, safer* move.

Join the ranks of alert Traffic Managers everywhere—order United *"Sanitized" vans for every long-distance move. Consult your Classified Telephone Directory for the nearest United agent.

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*There is no extra charge for *"Sanitized" United Service. Your United agent invites you to make use of *"Sanitized" equipment on your very next personnel move.*

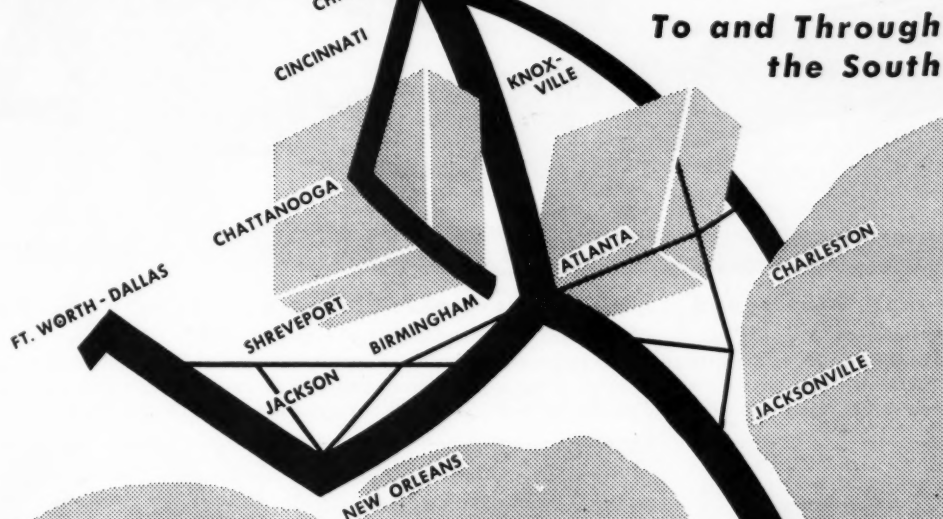


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Delta *airFREIGHT* Comparative Rate Table

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Cincinnati-Atlanta	4.55	4.90
Atlanta-New Orleans	5.05	5.12
Dallas-Atlanta	8.00	6.66
Atlanta-Miami	7.05	6.00
Cincinnati-New Orleans	8.00	6.44

Airport Pick-up and Delivery Extra If Desired



Municipal Airport, Atlanta, Ga.



Here are just a FEW of the reasons why this

Beechcraft

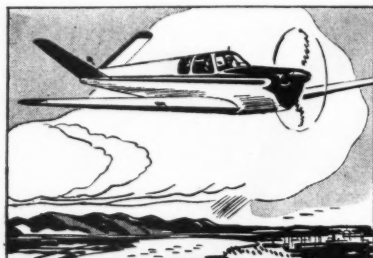
BONANZA is a better buy!



Ruggedness plus Speed . . . Performance plus Economy . . . Beauty plus Power

The Beechcraft Bonanza's high payload, high speed, and low operating cost, combined with extra safety and greater comfort, make this Beechcraft a better buy! It's easy to enter or leave the 4-place Beechcraft Bonanza with its unique retractable step

and wide auto-type door. Plenty of room for four big people to ride in uncrowded comfort. Maximum 5-way visibility and sound-proofing of the smartly appointed cabin add to the limousine luxury of this outstanding airplane.

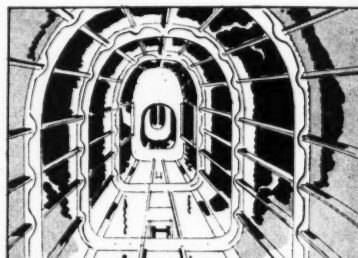


High Performance—At 8000 feet the Beechcraft Bonanza cruises at 170 mph using only 56% of the engine's maximum rated take-off power.

No engine overload, so you get extra speed with an extra margin of safety. Take a look at the Beechcraft list of guaranteed performance figures for the Bonanza.



...Plus Economy—Because of lack of engine overload you get lower maintenance costs and longer service life. Beechcraft Bonanza travel means you get an *extra low* per mile operating cost, an *extra low* fuel consumption of 9½ gallons per hour at cruising speed. You *save*, with a Beechcraft Bonanza.



...Plus Safety—Extra ruggedness of the sturdy framework means an extra margin of safety. Rated in the *utility* category at *full gross weight*, with a limit flight load factor of 4.4 G's, the Beechcraft A35 Bonanza has been subjected to dive tests by radio control at 275 miles per hour and pulled out safely at 3 G's.

Compare these performance features

Top speed, 184 mph
Cruising speed, 170 mph
Range, 750 miles
Service Ceiling, 17,100 feet
Fuel economy, 9½ gal. per hour

Compare these comfort features

Exclusive retractable step
Limousine entrance
Insulated, sound-proofed cabin
Quickly removable rear seat
Luggage compartment accessible two ways

Beechcraft

BONANZA

MODEL A35

BEECHCRAFTS ARE THE AIR FLEET OF AMERICAN BUSINESS

These are only a few of the reasons why the Beechcraft Bonanza is a better buy! See it today! A note on your company letterhead will bring illustrated brochures describing the Beechcraft Bonanza's many *extra* advantages. Write to Beech Aircraft Corporation, Wichita, Kansas, U.S.A.



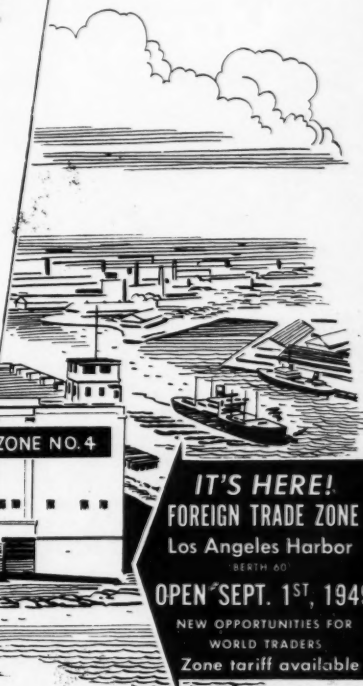
A harbor is known by the facilities it keeps



10,000 traffic men can't be wrong! They agree — Port of Los Angeles is the harbor that has everything for shippers. By rail, truck or air, cargo transit time is shortest from eastern industrial areas to trans-Pacific destinations, via Port of Los Angeles. Here are other advantages for shippers . . .

- ★ Preferential assignment of wharves and transit sheds
- ★ No switching delays to vessels
- ★ Direct transfer from rail to ship
- ★ No barges or carfloats
- ★ No congestion or traffic delays
- ★ High and low line trackage

That's why more shippers are using Port of Los Angeles facilities in 1949.



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FOREIGN TRADE ZONE
Los Angeles Harbor

BERTH 60

OPEN SEPT. 1ST, 1949

NEW OPPORTUNITIES FOR
WORLD TRADERS

Zone tariff available

PORT OF LOS ANGELES
planned and Built for Shipping

WRITE DEPT. 14, FOR WORLD PORTS SERVED AND SAILING SCHEDULES

BOARD OF HARBOR COMMISSIONERS

City Hall, Los Angeles 12, California

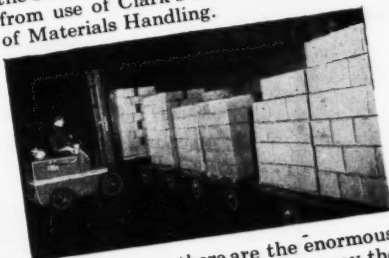
**THIS SPACE
UP HERE
IS *MORE*
VALUABLE...**



MATERIAL HANDLING *News*

Clearly it is a better deal to convert wasted cubic capacity up to rafter-level into live, profitable storage space, than it is to make a capital investment in equivalent additional facilities at the far costlier ground level.

Expansion of warehouse capacity by 25%, 50%, even 100% without a penny of new plant investment, is only one of the basic benefits realized by Industry from use of Clark's Modern Methods of Materials Handling.



In addition, there are the enormous savings of time that quickly repay the cost of versatile Clark machines.

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Warehouses Grow
Where only One (1)
Grew Before



Speeding the flow of materials increases production capacity. Faster loading and unloading cut demurrage charges. Rapid handling into and out of storage and use of air rights steps up stock turnover. Inventory-taking becomes simple. Costs go down—profits go up.

To discover your own savings opportunities and to develop practical plans for exploiting them, you have only to CONSULT CLARK.

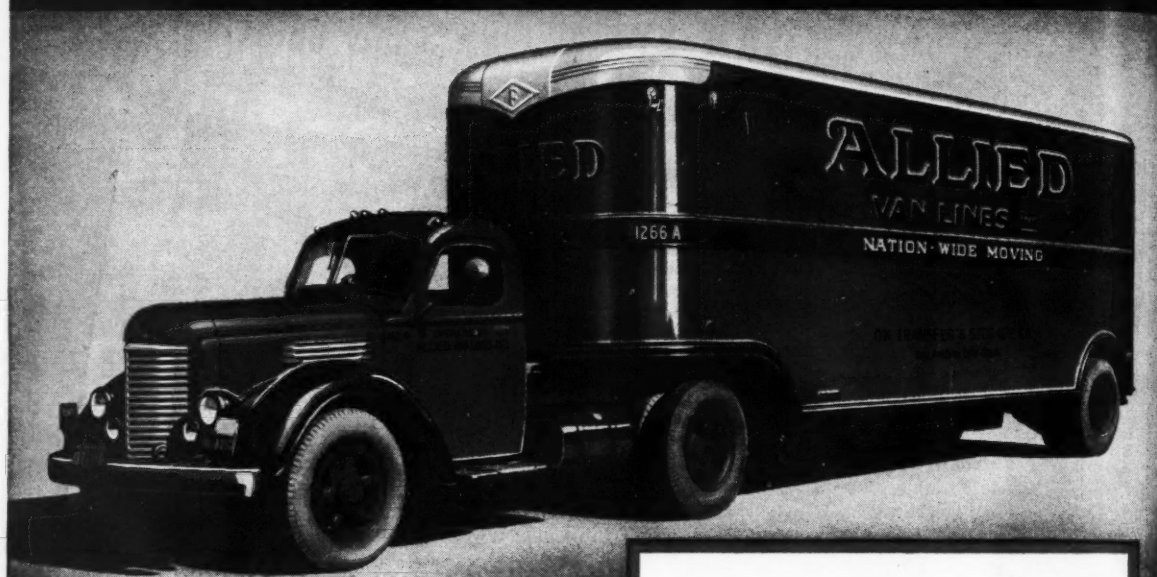
*Write for the current issue
of Material Handling News*

**INDUSTRIAL TRUCK DIVISION
CLARK EQUIPMENT COMPANY**
BATTLE CREEK II, MICHIGAN

**THAN THIS
SPACE
down here**

MORE MOVERS USE FRUEHAUFS

... because they earn more ... last longer ... thus, cost less!



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O. K. Transfer &
Storage Co.

As agents for Allied Van Lines, the O. K. Transfer & Storage Company, of Oklahoma City, covers the entire country in their delivery of household goods.

"Fruehaufs have proved best for our job," says E. C. Lette, president. "We selected our first Fruehauf over twenty years ago—because of its fine appearance, its superior equipment and the convenience of Fruehauf's local Branch for making repairs, painting, etc. Our first experience with Fruehauf was so satisfactory, we've used no other Trailer since."

No other equipment builder is more familiar with the needs of the furniture moving field than Fruehauf. Fruehauf Vans are better built, better engineered to your job. They're stronger, safer ... easier to pull. They stay on your job *longer* with *less upkeep*. That's why more movers are using these modern Vans than any other make.

If you aren't familiar with the important money-making features found only in Fruehauf Furniture Vans, by all means consult your Fruehauf man today. No other Trailer costs you less to operate—*per mile, per day, per year*.

World's Largest Builders of Truck-Trailers

FRUEHAUF TRAILER COMPANY

Detroit 32 • Los Angeles 11

In Canada: Weston, Ont.

83 Factory Service Branches

Hear Harrison Wood in "This Changing World"—
every Sunday over ABC. Consult Your Local Paper.

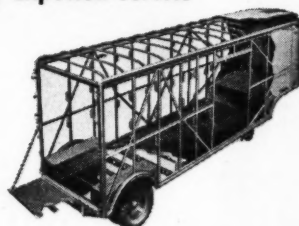


FRUEHAUF

Trailers

"ENGINEERED TRANSPORTATION"

Fruehauf Features That Pay Off In Thousands Of Miles Beyond Normal Expected Service



- PROTECTED ROOF CAP**
With extra metal reinforcement.
- BRAKE AND LIGHT CONNECTION**
Elevated to safer position above rail.
- DOMELIGHTS**
Convenient switches for lighting interior.
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Designed into, not cut into structure.
- SMOOTH PLYWOOD LINING**
Protects cargo.
- HARDWOOD FLOORING**
Tongue-and-groove over metal.
- GALVANIZED METAL SUB-FLOOR**
Seals out all dirt and moisture.
- INTEGRAL-FRAME CONSTRUCTION**
Less deadweight—greater strength.
- RECESSED CLEATS**
Flush with lining ... easy access.
- DOORS**
Completely seal out dust and rain.
- TAIL-GATE**
Extra large ... flush with floor.

FIRST in Truck-Trailer Transport

DISTRIBUTION AGE

EDITORIAL COMMENT



The Last Frontier

HISTORY books say that the last frontier disappeared about 1890 or thereabouts. They are thinking in terms of land; they fail to link that disappearance of vacancy with the rise of industry and the urbanizing of the country. More than this, they do not see that the last frontier in land has been displaced by the last frontier in industry: the efficient movement of goods to market. Production has been time-studied to almost the nth degree of efficiency. Distribution, on the other hand, remains largely a wilderness marked here and there by modernity.

The reason for backwardness in distribution is, at first glance, easy to find; production is often marked by integration and interconnected plants, whereas in distribution there are often ten hands to each product. The shipper packs and packages; the shipper may also bundle goods to trucks; the truckers truck to warehouses (or the rails take goods to warehouses); the warehouse men handle and store and re-handle; the local carrier takes the merchandise to the wholesaler, the wholesaler to the retailer and the retailer to the final consumer. Often this process is foreshortened, but still the multiplicity of interests exists.

To what avail, it would appear, is marketing research, the shipper's own domain, when his goods will be at the mercy of others? The answer is obvious: when most or all shippers follow through on sales, by exerting control at every step, they will be simultaneously reducing the area of uncertainty. And this uncertainty, it should be stressed, has little to do with the presence or lack of independents between the production line and final disposition of the product. Be there one or many hands between, the shipper's the one who's responsible. Shippers must conceive of the marketing function as *following through* on sales, and not of thinking that when the customer signs on the dotted line, that ends their concern with their goods. When this happens, the efficiency of production will largely be matched by the efficiency of distribution and particularly that segment of it which is marketing: the coordination of selling functions.

To visualize this smooth-functioning marketing process—one which implies but does not include the consideration of materials handling equipment, the implements of packaging, the freight cars and trucks and all the other paraphernalia of distribution—let us turn to some articles in this issue.

Distribution begins, not with the initials f.o.b. but at the moment the plant inspector gives his O.K. to the product; it even extends back to the acquisition of the raw materials used in the product. At that moment, selling begins—selling with emphasis on follow-through. Selling is not just selling, but making good on the sale. It means good packing and packaging, fast and sure handling, safe stowing on carriers, rapid carriage to points near final delivery and prompt arrival at destination. It means seeing the product safely into storage, then on to dealer shelves in prime condition. Selling is getting customer satisfaction.

Measuring the market is dependent to a very large degree on statistics and their utilization. Make sure your

figures were soundly derived, and then be sure you know how to analyze them for clearly understood objectives. For other ideas, turn to "Does 'Average' Mean Anything?" Here are some hints on what to be careful of. And from long experience, our advice is to watch all the things that you take for granted. Averages, for example.

Naturally, there's more to it: planning, gathering the data, evaluation, etc. But you can get help from innumerable sources, and often for free: associations, government agencies and what not.

C. L. Saperstein's article (which see) shows how research, when combined with managerial initiative and organization, all centering largely about the sales and traffic managers, can put a one-state product on the shelves of 48 states almost overnight. *That* is conquering a market. It took planning, coordination and the utilization of just about every form of transportation.

Many things can go awry in marketing. Both Henry G. Elwell and Leo Parker discuss some possibilities in their respective articles. The former, discussing the hazards of marketing from the traffic manager's point of view, shows the intimate tie-up of traffic management, regulatory agencies, management and other facets of marketing.

That is coordination, and supplying information in innumerable spots in the organization. How often have you wanted certain information and have gone to great lengths and expense to get it, only to find later that some department had the information you wanted? Perhaps it wasn't in quite the form you desired, but a little reworking would have given it to you.

The above excerpts from material in this issue, and accompanying comment, are presented to show how selling is follow-through, using the statistician, the traffic and sales managers, warehouse supers and others.

And this leads to the thought that tools are half the battle, good men to use them the other half. It is as well to think of these words, which were recently uttered by a respected traffic manager. He said "I always advise traffic managers—not the five-and-ten variety but *real* traffic managers—not to think right away of cost savings. First think of improving the job to the very best degree possible, then start thinking hard about how to trim here or there, to effect maximum savings *without hurting the job*. Too many of them do things just the opposite. Sure, I know that pressure to cut and to cut is on them. But if they're really out to do the best possible job (evaluating it, if you will, in terms of dollars saved), they have to think first and only about the job to be done. That top-notch job will bring savings too. Think about two things at the same time, and neither one's likely to be good."

When you get right down to it, broadening of shipper interest is the key to improved marketing. When the shipper gets over the idea that a sale is a transaction and learns that distribution is as complex and protracted as production, then will he see marketing—a major component of distribution—in its true light.

NEXT MONTH

LETTERS to the Editor

DISTRIBUTION AGE for October will present a symposium on the transportation tax on property. The three-percent tax on property was a war measure. But the impost has become heavier the more freight rates increase. In addition, long hauls pay more than short hauls, resulting in discrimination. Several associations, Congressmen and others have been requested to state their opinions respecting the tax and the advisability of legislation to correct this unfortunate situation. Results of this symposium are presented in the form of more or less brief statements by leaders in government, transportation and industry. Among those speaking their minds are H. D. Horton, president, American Trucking Associations, Inc.; A. H. Schwietert, traffic director, Chicago Association of Commerce and Industry, and Helen Gahagan Douglas, Representative from California.

Everett James Starr contributes an up-to-the-minute study of several leading port cities, and finds that high land values, congestion and the general movement into small peripheral communities has hit almost all of them. There are other factors responsible for the exodus of industry, politics, scarcity or abundance in different localities of investment money to finance new plants, and lackadaisical labor. Some of the material incorporated in Mr. Starr's report has not heretofore been available to the general reader. Industry, consulting engineers, politicians—they knew what was happening, but often were powerless to do anything about it. Decentralization will have and has had a great bearing on distribution and, in particular, on marketing procedures.

The major problem facing the airlines, observers John H. Frederick, air cargo consultant, is that of developing an increasing volume of traffic. The rate of growth in the past has been extremely rapid, the author points out, and there is no indication that air-traffic volume has approached its maximum potential. Still, Dr. Frederick warns, "The rate of growth may not be as rapid as it has been . . . due to several basic characteristics of air transportation . . ." No stone is left unturned in an analysis of these basic characteristics and their vital significance in air-planning for the future.

To the Editor:

We, the Sumitomo Warehouse Company, have been the subscriber to your magazine prior to the war and would like very much to be in possession of your recent issues. . . .

. . . As we are able to correspond by mail, we are taking the liberty of availing ourselves of the opportunity in forwarding you an article written by Mr. Kijiro Arita, a staff member, on "Geographical Distribution by Commercial Warehouse in Japan."

We shall appreciate very much for your kind cooperation in extending us your assistance for the progress of warehousing in Japan.

We are, dear sir, Willy Yasumichi, The Sumitomo Warehouse Co., Ltd., Public Relation Section.

(*DISTRIBUTION AGE extends kind assistance by publishing same on another page.*)

To the Editor:

You have no doubt been receiving information from the Pacific Coast on the proposed ship service for transporting fully loaded trucks and trailers. The Maritime Commission recently approved plans for construction of the vessels for this service, which is being supervised by H. F. Alexander. It's the shipping rage right now in this part of the country. If you will look at the August, 1947, issue, you will find a feature story on this "new" development—**DISTRIBUTION AGE** was two years ahead of the industry in reporting this setup.—Girard Neff.

Railroad Progress

(Editor's comment: We are in receipt of a note from *Railway Age* briefly questioning the validity of the statements anent railroads made by Henry G. Elwell and incorporated in his article in the July issue of **DISTRIBUTION AGE**, page 48. Attached tearsheets from a recent issue of the above railroad publication indicated that the railroads, in varying degrees, have been recently adding to materials handling equipment, the better to handle unit loads. Aside from the fact that one of the illustrations does NOT indicate unit load handling but rather man-handling piece by piece, the tabulations do not contradict any statements by Mr. Elwell; all they indicate is that the railroads are obtaining equipment. Mr. Elwell's remarks were to the effect that the railroads have shown insufficient interest in materials handling equipment, as evidenced by their attendance at materials handling shows.

denched by their attendance at materials handling shows.

Before presenting some quotations from Mr. Elwell's article, it should be pointed out that the letter to us rather diffidently admitted that much more buying could be done by the railroads, and that at least they are making some progress. The following are quotations from Mr. Elwell's article (all omissions do not affect the sense or full meaning of the article):

"... A study of the 1949 Materials Handling Exposition . . . put out by Clapp and Poliak, the firm that managed the exposition . . . (revealed) only 2½ percent of the attendance at the exposition was made up of railroad men. How does that stack up against over 12 percent from the chemical and plastic industries, almost 9½ percent from the metals industry, 8 percent from the machinery-manufacturing industry . . .

"Top management was pretty well represented. According to the Roper survey, over 19 percent of the visitors were top executives . . . you can compare that 19 percent for industry in general with a measly 7.2 percent for the railroads. So you can see I'm not pipe dreaming when I say the railroads don't bother much about materials handling."

"... you may be right to a certain extent, but I think you're exaggerating. Take a look at roads like the New York Central, the Southern Pacific, Union Pacific, Pennsy—why, they're using more equipment every day . . ." Further discussion in the article showed that BOTH railroads and shippers were held responsible for insufficient use of materials handling equipment.

"If palletization is to become a standard shipping procedure for all of industry, there must be more cooperation from the railroads. . . . The shippers ought to get together with the railroads—in fact with all the carriers—and get down to brass tacks. Develop standard-size pallets, determine maximum reasonable weight of unit loads; get together on the design of suitable transport equipment. You know what I mean—a little cooperation. . . . shipper and carrier getting together and working the thing out together. No reason in the world why they can't do it. But don't forget, it's a two-way proposition. The roads have to keep abreast of handling techniques. How else will they be able to help the shipper meet his materials handling problems?"

The insufficiency on the part of the railroads is admitted by the railroad publication.)

All-New and... Just as Rugged as They Look



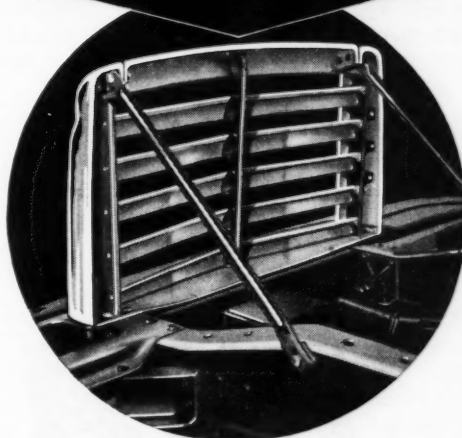
There's a new look in heavy duty trucks . . . all-new "H" line GMCs. These great new trucks, in weight ratings from 19,000 to more than 90,000 pounds, pace the entire heavy duty field in styling that adds to the prestige of your business. And they pace the field in design and engineering that give you better performance, lower operating costs, longer life.

Four new gasoline engines offer greatly increased power, in addition to traditional GMC extra value . . . famous four- and six-cylinder GM 2-cycle Diesels have higher compression for even greater agility and economy. New, stiffer, straight side rail frames, new wide-track axles, new broad-beam, extra comfort cabs . . . new features by the score all make all-new GMC "H" models best for all heavy city and inter-city transport. Let your nearest GMC headquarters give you complete details.

GMC TRUCK & COACH DIVISION • GENERAL MOTORS CORPORATION

GMC
GASOLINE • DIESEL
TRUCKS

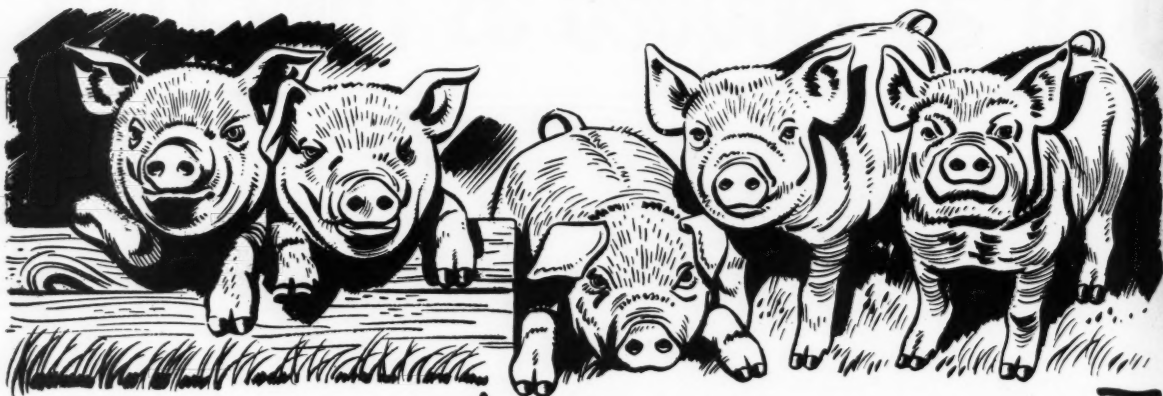
THE INDUSTRY'S ONLY
**BUMPER-BUILT
FRONT END**



Typical of GMC "H" line ruggedness are angle-braced, frame-mounted radiator grilles with top and sides of spring steel bumper stock, heavy gauge fenders, wide, thick bumpers . . . for complete front end protection, axle to emblem.

ALONG THE WAY...OF TWA

THESE LITTLE PIGS "FLEW" TO MARKET....



UP...UP...UP...



TWA AIR CARGO AND MAIL CARRIED FIRST SIX MONTHS OF 1949 EXCEEDED 17,800,000 TON MILES. IN LIKE PERIOD, **TWA** INTERNATIONAL AIR CARGO INCREASED

87%. EVERY DAY...MORE AND MORE SHIPPERS USE **TWA**. BETTER GET RATES...THEY'RE LOWEST IN **TWA** HISTORY!



USE STREET ADDRESS

HELPS SPEED SHIPMENTS TO DESTINATION. COMPLETE ADDRESS PREVENTS MISTAKES...ELIMINATES DELAYS...INSURES PROMPT HANDLING.

BLUE-BLOOD PORKERS...PRIDE OF THE MID-WEST...RECENTLY TOOK TO THE AIR ABOARD A COMFORTABLE **TWA** (TRANS WORLD AIRLINE) ALL-CARGO PLANE BOUND FOR ROME. PIGGIES WERE CONSIGNED TO ITALIAN EXPERIMENTAL AGRICULTURAL STATION AT CREMONA. WHY NOT LOOK INTO THIS EASY...LOW-COST WAY OF SHIPPING ALMOST ANYTHING ALMOST ANYWHERE? MAY SAVE YOU MONEY.

"GENEVA"



SYMBOL USED TO FACILITATE IDENTIFICATION OF **TWA** AIR

CARGO DESTINED TO SWISS CENTER. EACH OVERSEAS PORT OF CALL HAS ITS OWN MARK STAMPED ON LABELS (**TWA** DOES THE STAMPING) SPEEDS SHIPMENTS ABOARD **TWA** ALL-CARGO "GLOBE FREIGHTERS." KEEP **TWA** IN MIND.

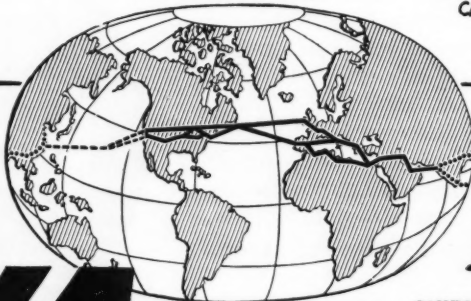


TWA PICK-UP SERVICE

SHIPPERS ALMOST EVERYWHERE GET **TWA** AIR CARGO MOVING FAST BY PHONING NEAREST **TWA** OFFICE AND REQUESTING THAT "PICK-UP" TRUCK CALL FOR SHIPMENT. CONVENIENT, SAVES TIME.

SHIPMENT GOT THERE...

Fact... You can easily get confirmation of safe arrival of your shipment overseas by phoning TWA a day or so after arrival. Call TWA or your own international freight forwarder.



TWA

TRANS WORLD AIRLINE

U.S.A. • EUROPE • AFRICA • ASIA



SHIPMENT TO GO?

Fact... Fastest way is via **TWA**. **TWA** Air Cargo goes places in a hurry. Direct shipments without off-loading require less crating... save packing costs... save time... save worry and work. Be smart. Get details today about **TWA**. Air Parcel Post speeds small packages in the U. S. and Overseas.



Photo, Standard Oil Co., (N. J.)

Truck-trailer stopping for fuel, en route through the Pennsylvania hills.

Chain Reaction

It's not only atoms, it's markets that can go booming when local and off-road carriers plus warehousemen work together. And "work" here means "team-work".

(Selling is not just selling merchandise; selling can be selling ideas. The article which follows is largely about common carriers and local carriers—truckers all—but it leads to one conclusion: the trucking field is ripe for a big sales effort. The boys in the business have their noses too close to their own individual grindstones, now that business has dropped off, to realize that some ideas they now have are provincial, to put it mildly.)

To show that truckers need educating, news has it that the Steamship-Motor Carrier Bureau, which was established to relieve congestion at New York piers, has had its employees suspended, for lack of money. Joseph M. Adelizzi, managing director of Motor Carrier Association of New York, which sponsored the cooperative venture, states that "the steamship people had about met their quota but the motor carriers fell short of theirs in spite of the many requests that were made to the truckmen engaged in import and export traffic.

"From all sides we have testimonials of the splendid job which the Bureau has been doing and the improvements in conditions brought about through the efforts of the paid staff . . . the relative handful of truckmen who underwrote the cost of the Bureau for the year 1947-1948, the same truckmen who generally underwrite every worthwhile activity in our industry here,

has become tired of carrying the load for 'free riders' and we can't blame them." Only about \$20,000 is required for financing the outfit until 1951.

Some truckers always find money for cutie calendars, dinners, and similar froth. Yes, the industry is ripe for idea sales.)

THE highway carrier industry (and there is always a temptation to put a question mark after the word "industry"; there are so many different commodities carried, so many regional problems and so much differentiation in thinking that the common carrier industry is really a collection of industries using similar highway equipment) has any number of problems today. Some, of course, can be solved sooner or later, but it will take great effort by groups of carriers, not by individuals. The truckers know it, but they are so habituated to either governmental directives (as during the war) or to uncoordinated individual effort that the usual response to a call for collective effort is the word "Utopian."

Well, here are some so-called Utopian ideas, which aren't really Utopian at all. They're just horse sense:

1. The facilities of the tariff bureau should be used as a clearing house (so to speak) for loading reports.

Right now, admittedly, is very doubtfully the time to make such use of clearing houses. Why? Because business has dropped off and individual truckers are so busy trying to drum up trade that they are scarcely in a mood to pass business they can get their hands on over to somebody else, even when assured of return "favor." This idea of a clearing house would be to promote interchange of information on loadings between carriers. Participants in joint tariffs could do this without any barriers of rate differentials. This would benefit carriers booking freight for through haul in particular. It could greatly increase the use of through rates rather than combinations, thereby promoting better service and lessening transportation costs to the shipping public.

Let us assume that right now isn't the time to put this idea through (and this idea, incidentally, can't be knocked on the head by saying that it's all right for household goods carriers—who made use of the idea—and not for common carriers because they operate differently). Is the time for this idea when business is active, truck equipment is very tight and the government has to step in to see that things are run right so that goods can get to destination without delay? That's what happened during the war; the ODT stepped

(Continued on page 32)

TIMETABLE SHOWING HOW CORPORATION X WENT "NATIONAL" IN DISTRIBUTION

FIRST WEEK

MONDAY 10:10 a.m.	Sales Manager receives acceptance of sales deal calling for initial national distribution through large coast-to-coast chain, such sale to begin in 14 days.
10:30	Management approves required coordination of all facilities.
10:45	Departmental heads confer.
2:00 p.m.	Traffic manager continues development of distribution plan.
2:45	Traffic manager completes arrangement for trucks in headquarters area and in three other market areas, to serve retail outlets.
3:15	Traffic manager completes schedule and routing plans for all additional markets where stores will be serviced by warehouse trucks.
3:30	Traffic manager calls representatives of public carriers involved, presents problems and asks for delivery to given destinations in desired weights and volumes.
4:30	Sales manager, after assembling data from Traffic, Shipping, Production, Advertising and other departments, phones buyer for each customer and gives dates that goods will be at each warehouse location. Solicits cooperation.

TUESDAY

a.m.	Air Parcel Post, Express, Air Express, Air Freight and local trucking given two shipments for each customer warehouse: <ul style="list-style-type: none"> 1. A package for each outlet, containing posters, dummy cartons, etc. 2. Token shipment for store manager's meeting, and other promotion work.
p.m.	First shipment starts to most distant point, sufficient for initial distribution to stores.

WEDNESDAY to FRIDAY

Continued preferred handling, first class shipments.

MONDAY

Production permits inauguration of larger, follow-up shipments for replacement purposes and for bulk warehouse stocks.

WEDNESDAY

Too small "diversions" effected for precautionary purposes to supply distribution points reporting non-arrival of initial shipments.

FRIDAY

Telegraphic reports indicate deliveries made or in process of being made to all outlets. X Corp. product featured in store circulars, advertising, etc.

MONDAY

Spearheaded by customer's two-week anniversary sale, the product is on coast-to-coast sale basis, and another success story is credited to aggressive merchandising and skilled use of all means of distribution.

By C. L. SAPERSTEIN
Packaging Consultant

(Rapid-fire distribution is swell—if you can do it! Some companies can, but they have all SIX basic requirements:

1. Financial ability to expand production and distribution; they also have reserve strength.

2. Ample production facilities.

3. Ability to do a proper publicizing job and have sales coverage.

4. Ability to predetermine competitive factors: existing products, consumption patterns—ability to carry out or have carried out the necessary marketing studies.

5. The peculiarities of distribution setups in given territories have been determined.

6. Changes in channels of distribution (branch plants, etc.) have been considered and, where necessary, have been carried out.

These basic needs, which Corp. X had, would have been needed whether the company went national or simply expanded sales into a new major area.)

ALMOST extinct is the old head-drummer type of sales manager who used to proclaim, "It's up to me to get their names on the dotted line; what happens after the company gets the order is no concern of mine!" Today, selling goes hand-in-hand with other processes of distribution. Order-taking, which temporarily came back during war-time shortages, is once more "out." Manufacturers and producers must do more than just sell the distributor or dealer; they must see to it that goods pass out of warehouses and off shelves. This means merchandising tie-ups. This means shipments made on time. This means goods processed and packed to arrive safely, to display well, to mesh with the advertising and to tempt the customer to "take me home."

Almost extinct, too, is the traffic manager who used to say, "Give

RAPID-FIRE DISTRIBUTION

When sales go "national", regional or what have you, fast and highly integrated action with the traffic manager as king-pin is needed to insure successful distribution.

the sales manager what he wants, and let him worry about the deal. I did my job."

Successful managers today, therefore, must work hand-in-glove with all departments as they organize each new merchandising venture. The managers must counsel with production on necessary volume and where special specifications for packaging or packing are required; with the comptroller on costs involved; with the advertising department; with traffic and shipping departments. In fact, as regards the latter two, progressive selling strategy is more and more closely coordinated with the processes of transportation and the requirements of packing and shipping.

Functions of Marketing

A specific example was the situation which suddenly faced the sales manager of a moderately large outfit producing a new popular-priced food item. His product was known only in a limited area of the country. Overnight, he had an opportunity to go national through a tie-up with a nationwide chain. The weeks which has been consumed in working out the terms of the sale, the details of cooperative advertising and in winning the consent of necessary officials of his own organization and of the chain, had added up to more time than was realized. Everything was predicated upon key participation in an anniversary sale which would be heavily publicized and which was only a matter of a fortnight away.

A conference was called of all department chiefs who might contribute something toward making this merchandising miracle come to life. The big question was: could the necessary quantities of merchandise be in the warehouses at the most remote points in time for deliveries to be made to all stores?

Before production could start, and before the shipping department could start "squaring off" loads for the furthest points—before advertising could be assembled in kits and bundles of the correct quantity for each of the chain's divisions—the traffic manager had to do heavy spade work to determine if deliveries could be made on time or if the firm must pass up this great opportunity.

He and his department assistants estimated weights and cubes for each destination. Where normal transportation would not arrive on time, a portion of such shipments would have to move by more expeditious means, with balances following in a few days. Each destination required a different bit of planning, routing, coordinating and pressure. Here, an l.c.l. forwarder would suffice; here, an interstate trucking line; here, any regular carrier would be too risky and a contract trucking arrangement would have to be made. There were transfer points to be considered; a pool-car to be broken down by a distant warehousing distribution service, etc.

And thus it went for several hours. The entire traffic department dropped everything but checking, phoning, comparing and developing a potential shipping schedule—a starting time and an arrival time to blanket the country within the period allowed. The traffic manager was ready to report the hoped-for conclusion—with production and shipping working overtime to deliver the merchandise.

It Could Be Done!

The whole plant went into high-gear production for national distribution. A scant 24 hours after the sales manager learned that his goods had been accepted for a national sale "breaking" two weeks later (and which required that

everything be in hand and ready at least four days before the sale), two shipments were started for each of the customer's divisional headquarters. Local trucking, express, air express, air freight and air parcel post all were enlisted. This included a token shipment of goods for use by the chain's supervisors to acquaint store managers with the new product, and a package for each store with advertising material, literature and empty cartons necessary for window-trimming purposes.

A few hours later, the first shipment of the merchandise itself was on its way to the most distant division, sufficient to make initial distribution to every store. For several days every shipment was a first-class, preferred-handling request despite added cost. These were followed by larger shipments for replacement purposes and for establishing sufficient warehouse stocks. Then followed constant tracing and "follow-through." One or two small "diversions" were made as a precaution where reports indicated delayed arrivals.

That the sale was a success and that today the product is known in almost every American home must be credited not to one department but to a whole team working together. For its being a good product, production may take a bow. For bringing it to the attention of the chain group, aggressive selling and advertising must be credited. Less spectacular but certainly no less deserving of credit for the success of the merchandising venture was the behind-the-scenes impresario of distribution—the traffic manager.

Mechanics of Marketing

The tie-up between merchandising and distribution is not always predicated upon the time factor.

(Continued on page 55)

Handling in Cold-Storage a



Fig. 1. Three forms of materials handling equipment—fork truck, wagon and elevator — expeditiously move agricultural produce from an upper floor.



Fig. 2. A fork truck with an extra-high lifting capacity is tiering paper rolls for temporary storage at the North Pier Terminal Co., Chicago.



Fig. 3. Warehouse space is organized in such a manner that maximum space utilization is realized despite banks of overhead refrigeration pipes.

THE primary factor operating against mechanization of materials handling in some warehouses is their being multi-story structures. More than one floor means elevators, and elevators often mean bottlenecks.

Frequently, elevator load-capacity permits lifting fork truck or load but not both. Hence, one set of trucks must be used on the ground floor to service carriers while others must be located on upper floors for stacking and handling pallet loads. A second factor hindering materials handling equipment use is improper use of those devices. Fork trucks and other equipment often stand idle a large part of the time waiting to be carried by elevator to one or another work post. Seaboard Terminal and Refrigerating Company, Jersey City, solves the problem by loading incoming goods onto pallets which are carried on six-wheel warehouse wagons. These are pushed from the carrier into the elevator and then hoisted to the correct floor. There, the wagon is parked in the vestibule adjacent to the elevator. Fork trucks pick up pallet loads from the wagon and deliver them into freezer or cold-storage rooms. Outgoing shipments follow a reverse pattern. (See fig. 1) In this fashion, fork trucks are rarely idle.

In the majority of warehouses, almost as much time and effort are required to carry merchandise from floor nine to floor 10 as from floor two to 15, since both constitute elevator trips. Chutes, conveyors, hoisting equipment and other floor-linking devices are often lacking. Although these low-cost aids to materials handling can be installed easily and quickly, many concerns neglect to use them. At the Harborside Terminal, on the

ge and Merchandise Warehouses

In adapting handling to fit existing warehousing facilities, you don't have to fit round pegs in square holes. You can square the peg to fit.

By BENJAMIN MELNITSKY

American Export Line piers, pallet loads travel between floors on small elevators, while loose merchandise travels by chute. The savings in man- and machine-hours are considerable; the cost of necessary equipment is negligible. Gravity is about the only form of motive power which is absolutely free.

Balconies and mezzanines present similar problems. Because of their general inaccessibility, they are used chiefly for long-term or dead storage. Linking the upper level with the main floor by conveyors or elevators is good, but fork trucks with extra-high lifts may be even better, particularly if loads are palletized. At the Lehigh Warehouse and Transportation Co., Elizabeth, N. J., a fork truck with a 220-in. lift raises pallet loads from main floor to balcony area where a smaller truck completes the materials handling operation. The same type of truck finds wide use in high-ceilinged single-story warehouses like the one shown in Fig. 2. If several pallet loads are stacked on the floor and the multiple load is then lifted, the height-capacity of the conventional fork truck can be greatly increased.

Such ceiling obstructions as sprinkler-system pipes, beams, structural work, and overhung and underslung objects conspire to complicate mechanized handling and to rob the plant of valuable storage space. In freezer warehouses the problem is made even more difficult by space-consuming banks of refrigeration pipes.

Often, by changing room layout, aisles can be made to coincide with those overhead areas which are particularly cluttered. At Seaboard, for example, aisles are located below and parallel with the

huge banks of freezer pipes. Thus, storage areas are free of major overhead obstructions and can be loaded close to the ceiling. Where such an alignment is possible—for instance, at the Alford Refrigerating Warehouse in Dallas—maximum space utilization is made possible by planning both pallet location and unit-load height. This is pictured in Fig. 3.

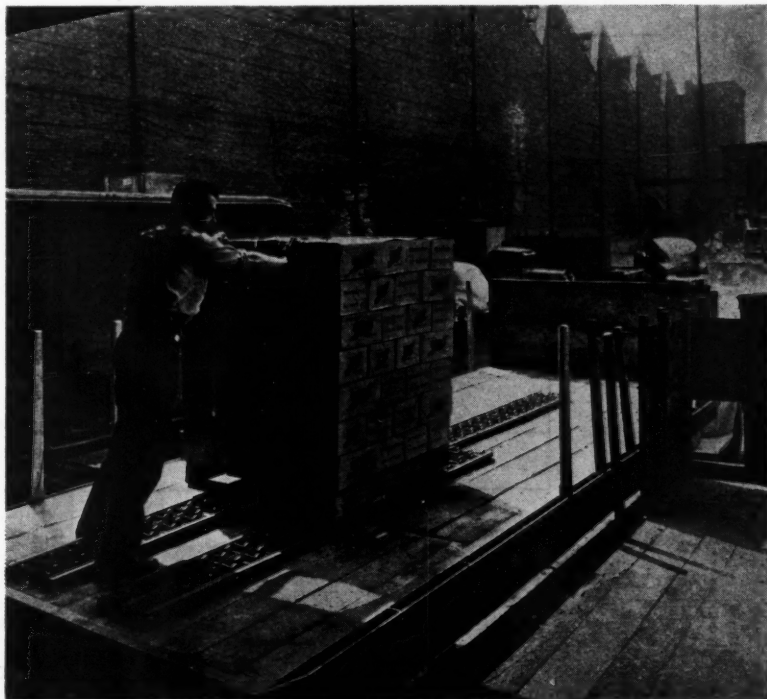
Often overlooked is the simple, yet tremendously valuable, practice of pre-planning height of pallet loads in accordance with the amount of usable overhead space. If distance from ceiling to floor is 12 ft., it can be seen that the pallet load measuring four feet one inch in height would be extremely wasteful of space. Only two of these pallet loads could be stacked

in the area. Increasing height of pallet to six feet or decreasing it to four feet would result in full space utilization.

Factors tending to complicate mechanization of materials handling are numerous not only in warehouses but in carrier facilities as well. Because of the weight of fork trucks and other types of mechanized equipment, direct entry on to over-the-highway carriers is frequently impossible. Pallet loads must be dropped at the rear of the motor truck and then distributed by hand. By placing a portable roller conveyor on the floor of the highway truck, as shown in Fig. 4, the Atlas Storage Co., Milwaukee, is able to speed loading of palletized ship-

(Continued on page 38)

Fig. 4. Pallet load of cases, after being dropped on the tail of highway carrier, is pushed to the front of flat-bed truck on portable roller conveyors.



AIRCARGO T

The CAA sees textile shipments by air up in the future and some durables and agricultural shipments down, when measured as a percent of total shipments. Density is the answer.

By JOHN H. FREDERICK
Aircargo Consultant

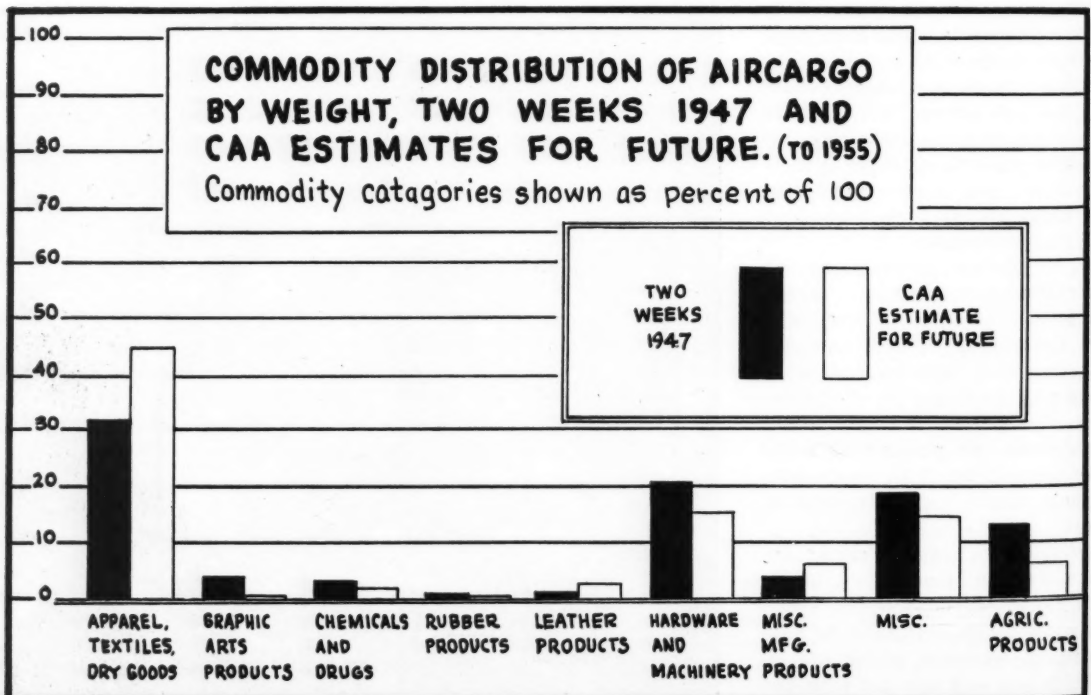
BACK in 1939, before there was any aircargo traffic to speak of, and at a time when all air movements were express shipments, C. G. Peterson, chief engineer of the Railway Express Agency, made an analysis of air traffic. His conclusions were that, by and large, the commodities which moved by air were those related to the speeding up or functioning of an industry, rather than those ready for direct consumption.

In 1941 he again made an analysis of air express shipments and arrived at the same conclusions, which in fact held until 1945 when we began to have some all-cargo plane

operations. The Peterson survey is summarized in the first two columns of Table I (see page 21). It will be seen that through 1941 the only types of consumer goods which moved in large volume were graphic-arts products, such as newspapers, magazines, and racing forms, and that the tonnage of these was surpassed by electrotypes, cuts, mimeographs and news photographs, which were all classified as producer goods. Reference to this table shows that graphic-arts products and machinery constituted about half of the pre-war air-express tonnage. Textile and apparel goods accounted for only about 10 percent and agri-

cultural products, consisting almost wholly of cut flowers, for about three percent.

It was not until 1947 that another survey of aircargo traffic was made for both certificated and non-certificated air carriers. This survey, which covered only one week's traffic, was required by the Civil Aeronautics Board in connection with one of its aircargo rate hearings. The results of this study, also shown in Table I, indicate the pattern of aircargo likely to prevail for some time. It will be noted that, in contrast to the pre-war period covered by the Peterson studies, aircargo as distinct from air express of the



TRAFFIC PATTERNS

TABLE 1—Commodity Distribution of Aircargo, By Weight, 1939-47 and CAA Estimate of Potential*

	Air Express		Certificated Airlines Week Oct. 19, 1947	Non-certificated Airlines Week Oct. 19, 1947	All Airlines 2 Weeks Sept. and Oct. 1947	CAA Estimate for Future
	April 1939	April 1941				
	Percent	Percent	Percent	Percent	Percent	Percent
Apparel, textiles, dry goods.....	12.0	9.0	11.8	48.5	30.6	45.6
Graphic arts products.....	22.0	26.0	7.8	.6	4.3	1.7
Chemicals and drugs.....	1.0	1.0	3.0	3.7	3.0	2.2
Rubber products.....			2.9		1.2	0.8
Leather products.....	1.0		.8	3.4	1.9	2.7
Hardware.....	13.0		1.3		.8	
Machinery (except electrical).....	8.0	32.0	22.3	7.6	14.8	16.4
Electrical machinery.....	5.0		8.9	4.7	4.5	
Non-ferrous metal products.....	5.0	5.0	3.1	1.9	4.7	5.4
Miscellaneous manufactured products.....	10.0	10.0	27.7	11.6	18.8	5.5
Miscellaneous.....	20.0	13.0	7.6	16.5	13.5	14.8
Agricultural products.....	3.0	2.0	2.8	1.5	1.9	4.9
Animal and fishery products.....						
Total.....	100.0	100.0	100.0	100.0	100.0	100.0

*Table adapted from CAA Airport Planning Bulletin, *Domestic Air Cargo*, 1948.

earlier days has taken on a different composition. Graphic-arts products now account for only four percent of aircargo tonnage, while textile and apparel goods have assumed the place of first importance among the various commodity groups.

A shift toward consumer goods was natural as the base of aircargo broadened. Consumer goods generally have lower density (the weight of a commodity that can be put in a cubic foot of space) than producer goods. This is something of extreme importance in considering the pattern, present and future, of aircargo traffic. The limiting effect of the density factor on air-cargo development is obvious. Only a small percentage of the freight traffic of the country has a density within the range of the effective density of the plane. According to a study by the U. S. Tariff Commission, only three percent of commodities shipped in domestic freight have an average density of six pounds or less; only 18 percent have 15 lbs. or less; and only 27 percent have 20 lbs. or less. Moreover, most of the lower-density items were concentrated in highly fabricated commodity groups; for example, in tex-

(Continued on page 30)

TABLE 2—CAA Estimate of Enplaned Cargo, 1949-1950,
by Major Commodity Groups.

Commodity Group	Percent of enplaned cargo
Food and kindred products (processed)	6.2
Tobacco (processed)	3.6
Textile-mill products	18.0
Apparel	27.6
Lumber and timber3
Furniture and finished lumber6
Paper and allied products4
Printing, publishing and allied products.....	1.7
Chemicals and allied products	2.2
Petroleum and coal products4
Rubber products8
Leather and leather products	2.7
Stone, clay and glass products.....	.3
Iron and steel products	2.2
Nonferrous metals and products	5.4
Electrical machinery	2.7
Machinery (except electrical)	5.5
Automobiles and equipment	4.5
Transportation equipment (except automobiles).....	1.5
Miscellaneous industry products	5.5
Metals (selected)	1.8
Agricultural products	4.9
Imports (selected)	1.2

SELECTING MATERIALS HANDLING

Here are basic questions you should ask yourself (and other managers in your organization) when buying capital equipment.

WHEN management is giving attention to procurement of capital investment, there is a fairly uniform trend of thought regardless of the item or items to be purchased. Three basic questions usually present themselves;

- 1—What will the fixed charges be?
- 2—What will the variable charges be?
- 3—What effect will the procurement have upon the breakeven point?

Extracts from a paper prepared by W. B. McClelland, Clark Equipment Co.

In order to estimate the annual costs for different methods of handling equipment which may be under consideration, a worksheet titled "Materials Handling Cost Analysis" (see table on this page) has been prepared. Provision should be made to calculate costs for each method, assuming eight, sixteen and twenty-four hours per day operation. The motive is to analyze the fluctuations of fixed and variable costs as volume of production varies. Possible provision should be made to assume even shorter operations.

Several of the items are chosen for special comment:—

Installation charges—All labor, material, burden and other costs involved in removing the plant accessories from the receiving carrier, then placing and conditioning them ready for operation.

Maintenance facilities—The invoice prices, installation costs, etc. required for equipment to repair and maintain the handling devices.

Fueling and/or Power Facilities—Invoice price, installation costs, etc., for facilities necessary to provide power and/or fuel. If propelled by internal combustion engines, gasoline facilities must be provided. If batteries are the source of power, then charging equipment and battery handling devices must be obtained.

Alterations to present facilities—Labor, material and burden involved in necessary alterations to present property. Possibly door openings must be altered, floors must be strengthened or gravel storage yards must have a concrete base.

Freight and other transportation—All transportation charges on equipment, material, etc. necessary for each method. Also any transportation and possibly expenses for personnel making investigations pertaining to the project. If the accountant wants to be precise about his accounting these items might be sub-divided in accordance with the first four items above and the next two which follow.

Design Work—All labor, material and burden involved in engineering work required.

Supplies—All expendable items such as pallets, hooks, cable, etc. needed to use the handling equipment.

MATERIALS HANDLING COST ANALYSIS—() DAYS PER YEAR

	METHOD 1	METHOD 2	METHOD 3
Invoice Price of Equipment			
Alteration to Present Facilities			
Installation Charges			
Maintenance Facilities			
Fueling or Power Facilities			
Freight and Other Transportation			
Design Work			
Supplies			
Other			
Credits			
TOTAL INVESTMENT			
Depreciation (years)			
Interest (%)			
Taxes (%)			
Insurance (%)			
Supervisory personnel			
Clerical personnel			
Maintenance personnel			
Other			
TOTAL FIXED CHARGES			
Operating Personnel			
Power and/or Fuel			
Lubricants			
Maintenance Labor			
Maintenance Parts & Materials			
Other			
TOTAL VARIABLE COSTS			
TOTAL ANNUAL CHARGES			

EQUIPMENT

Credits—The net realizable income from selling items which are abandoned. This figure will be the difference between sale price and the cost of preparing the abandoned items for sale with a further deduction on the book value of those items. This could be a debit if the book value exceeds the net amount realized from the sale.

Depreciation—The rate of depreciation for each class of equipment is probably a policy dictated by top management, possibly the board of directors. Normally when using the word depreciation we mean and think of two different elements of cost technically discussed as depreciation and obsolescence. Depreciation is deterioration due to wear and tear. Obsolescence is a cost occasioned by better processes or equipment becoming available. Equipment becomes obsolete for two basic reasons:

(a) The user of the equipment may devise new processes making present facilities worthless or his customer may demand a change in produce of such a nature that present facilities cannot be used.

(b) The producer of the equipment he owns may offer new models the economy of which prompts abandoning present facilities in favor of new ones even though the mechanical condition of that equipment dictates more years of productive life.

If the policy is to depreciate such equipment on a use basis (such as per ton handled, per hour operated, etc.) instead of an annual time basis, this account should then be included under variable charges.

Interest on investment—It is open question whether interest on investment should be included on

an analysis sheet such as the one suggested. Some persons say that of course we must include interest on investment in every procurement. Others say that it is not logical to include interest on investment. Such a person claims that one should add the fixed and variable charges for each case then compare the return on investment with each potential method.

Operating personnel—The cost for those persons actually assigned to operate the equipment whose time is charged to this operation only when so assigned. This account should include the wages received as well as other expenses involved in keeping an employee on the payroll, such as social security, payroll charges, medical care, etc. Incidentally, the actual wage paid is not the only cost of keeping any person on the payroll regardless of his station in the organization.

Maintenance Labor—The cost for maintenance labor which fluctuates with the use of the equipment. First, there is the maintenance work on the accessories involved, that is, on industrial trucks, cranes, conveyors, or whatever kind of equipment is being considered. Secondly, there is the maintenance labor on the supplies required for use with this equipment. Let us use pallets as an example. If expendable pallets were

involved, the account would probably not set them up on his books as a fixed asset but would carry the inventory as a deferred charge instead. As these pallets were used he would transfer the value from the inventory account to an expense account. In such a case, little or no maintenance labor would be required. If, however, durable pallets were involved he might capitalize the cost of the pallets required for continuous operation of the plant. He might then charge to depreciation the estimated cost due to obsolescence. Any charges for repairing the pallets or cost of replacing those destroyed or lost might be considered a variable charge. The accounting practice for perishable tools might be acceptable for costing such supplies.

There are other factors, difficult or impossible to measure in dollars, which should be considered:

1. **Maximum and Minimum Costs**—Consideration should be given to the probable trend of business volume. First, what is the maximum probable tonnage to be handled with an analysis of cost under such conditions? Secondly, if business really gets tough what is the minimum production that can be expected? Then discarding the pessimistic and optimistic attitudes what is the best estimate

(Continued on page 35)



Photo, Shell Oil Co., Inc.

Fork truck tiering palletized drums.



SPECIAL TO

DA

THE trend today in Japan, so far as public warehousing is concerned, is toward centralization. Commercial warehouse space in six large cities in 1924 was 53 per cent of total space in Japan; in 1944 it was 61 per cent; in 1948 it was 62 per cent. There was a temporary drop in this concentration by 1947, but this marked the central point of postwar readjustment and was not typical.

Table I shows that the amount of floor space in the various prefectures varied in 1948 from a maximum of 141,783 tsubo (5,074,188

sq. ft., a tsubo equalling 36 sq. ft.) to 422 tsubo (15,192 sq. ft.). While floor space is available to some extent in nearly all prefectures, concentration is particularly noticeable in Osaka and Kobe for the Kansai Area, and in Tokyo and Yokohama for the Kanto Area. Kobe is the most important prefecture, in terms of total floor space. Osaka is third in importance on a space basis, but first in the number of commercial warehouses of all types.

The reasons for increased concentration are that, while commodities entering commercial warehouses are produced in greatest quantities in the hinterland, they are either consumed largely in the great harbor cities or are exported therefrom. This is as it should be

if the commercial warehousing industry is performing its chief economic function of adjusting seasonal production of goods to consumption and making shipments more economical.

However, the question sometimes arises whether the adjustment of seasonal production to a more or less regular consumption should take place in the regions of production or those of consumption. Those advocating storage at or near consuming markets stress the advantages to users, who are able to take advantage of sudden increases in prices. Moreover, when spot stocks of commodities are held close to effective points of consumption, there are the advantages of early and prompt delivery. The presence of goods in marketing centers also facilitates the use of warehouse receipts in financing. In addition, nearby storage makes for easy inspection by possible purchasers.

Another advantage is that when commercial products are near harbor facilities, they can be shipped to markets where demand and price are favorable.

(Editor's comment: Readers are advised against reading more here than Mr. Arita has actually stated. There is no indication that prices are excessively volatile; that the Japanese warehousemen have suddenly discovered the importance of storing close to market, etc. It does

TABLE II
PERCENT OF FLOOR SPACE
OF COMMERCIAL WAREHOUSES, JAPAN

Geographic Division	1924	1930	1935	1944	1947	1948
						(Nov. 30)
Tokyo	8%	8%	8%	10%	9%	12%
Yokohama	6	11	9	9	10	11
Nagoya	3	4	4	8	7	6
Osaka	17	17	16	17	10	12
Kobe	16	16	15	13	16	17
Kanmon	3	3	3	4	2	4
Others	47	41	45	39	46	38
All Japan	100	100	100	100	100	100

FROM JAPAN



Public warehouses being concentrated
in major port cities.

By KIJIRO ARITA

Deputy Chief, Planning Section,
Sumitomo Warehouse Co., Ltd.,
Osaka, Japan

indicate that Japanese warehouses have planning sections; that the Japanese warehousemen (at least some of them) are keen students of economics; and that increased stress is being laid in Japan on exports, to help balance the heavy volume of imports. This article is an object lesson to those unthinking persons who believed that Japan was prostrate. There are still 70-odd million Japanese.

Further study of actual figures on floor space (long table) should not be read amiss by readers, insofar as concentration of space per prefecture is concerned. Hokkaido, northerly island of the Japanese chain, is much larger than many of the other prefectures, yet has less square footage than the Osaka-Hyogo or Tokyo-Kanagawa areas.

Secondly, the data include shed space, not merely warehouse space. In this connection, we are not aware of the basis upon which sheds, so-called, are differentiated from warehouses. In view of the very different building construction prevalent in Japan as compared with that in the U. S., direct comparison of data from Japan with that for the U. S. should be made with care.

Figures for the tables were supplied in "tsubo," the Japanese measure of square footage; one tsubo equals almost exactly 36 square feet, and the figures were converted for the convenience of our readers.

TABLE I

Floor Space of Public Warehouses and Sheds of all
Prefectures in Japan (as of Nov. 30, 1948)
Thousands of Square Feet

PREFECTURES

Hokkaido	3,852.0
Aomori	249.0
Iwate	87.4
Miyagi	304.1
Akita	145.5
Yamagata	103.5
Fukushima	254.7
Ibaragi	343.4
Tochigi	127.6
Gunma	413.3
Saitama	353.7
Chiba	87.6
Tokyo	3,538.3
Kanagawa	4,660.3
Niigata	1,019.2
Toyama	542.8
Ishikawa	439.2
Fukui	267.4
Yamanashi	15.2
Nagano	1,437.6
Gifu	142.0
Shizuoka	849.0
Aichi	2,166.4

PREFECTURES

Mie	752.0
Shiga	137.6
Kyoto	1,312.4
Osaka	3,447.7
Hyogo	5,104.2
Nara	72.3
Wakayama	101.4
Tottori	36.8
Shimane	30.6
Okayama	274.9
Hiroshima	621.8
Yamaguchi	181.8
Tokushima	91.5
Kagawa	338.8
Ehime	238.5
Kochi	112.0
Fukuoka	1,256.1
Saga	54.2
Nagasaki	901.6
Kumamoto	85.6
Oita	53.0
Miyazaki	64.6
Kagoshima	128.1

TOTAL, ALL PREFECTURES 36,796.7

CARD and C

By LEWIS T. BOLGER

FLEXIBLE bookkeeping through the use of cards and photo-copying is a valuable instrument for innumerable industrial firms. The advantages include greater speed in inter-departmental transfer of records, greater accuracy because of elimination of need for recopying, and simplicity of set-up. The following case history is typical, and represents the usual requirements in equipment and the skills employed.

Through the use of cameras, cards and duplicating devices, Company X has eliminated virtually all paper work in connection with the handling of its accounts receivable controls, and has put its payment performance records on a *constant-flow* basis, so that full and up-to-the-minute information is always available to the executive branch, the credit department, the accounting section and the sales division.

The flow is maintained by means of visible index cards on a series of panels. For transcribing periodic or permanent control records from the cards and panels the firm uses a Remington Rand Dextragraph (photo-copying) and Film-a-Record (micro-filming) system. Once the account cards have been set up, all transcribing, proofreading and checking are eliminated, since information for permanent records or supporting documents to the accounting section is taken off simply by photographing the panels at various stages.

The mechanics for the card-and-camera procedure are set up with the order writing and billing routines at the home offices. The order writing and billing procedure is handled by a direct duplicating process. Eight copies of invoices are required for various office procedures, and these as well as the

customer's copy are run off from a master copy. In addition, the master copy is used for the preparation of analysis slips that serve to create the perpetual inventory records, and is used for sales analysis which is prepared both by product and by sales-territory breakdowns.

Then, as a final run before the master copy is removed from the duplicating machine, two die-cut cards are "run through" to pick up the following information:

1. Customer's name;
2. Invoice date and number;
3. Amount of the invoice (this and above items on a single line along the top edge of card);
4. Terms of sale;
5. Routing of shipment;
6. F.o.b. terms, and whether shipment was to go prepaid, collect, etc.

The two cards bearing the invoice information are next sent to the accounts receivable section of the bookkeeping department, where they are separated by the accounts receivable clerks into two groups.

- (a) One serves as the alphabetic copy of the accounts receivable;
- (b) The other becomes the numeric copy.

The groups are totaled for the

day and balanced back to the total invoicing for the day as compiled by the regular bookkeeping section.

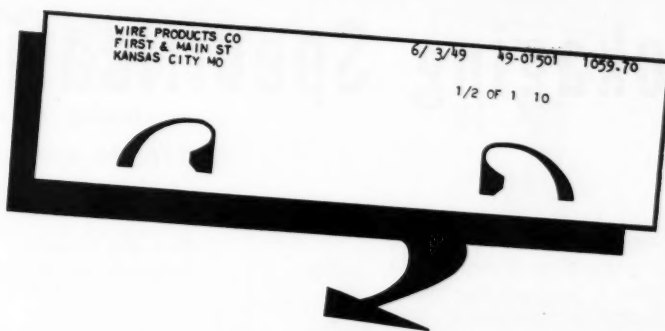
The numeric copies of the cards taken from the billings for each day are "posted" by inserting them in sequence by invoice numbers on the special panels adapted to receiving these cards. In filing the cards on the numeric panels, there is a break created between months by inserting blank cards, and each group for its respective month bears the title of the month. With the filing of new invoicings in this manner and the removal of items as payments are received, the cards on these panels represent an age listing of accounts receivable by months, in the chronological order and by invoice numbers in consecutive order, from the oldest to the most current open item.

Control tapes are taken for each panel and as new items are added to the numeric panels, or as items are removed when a payment is received, these control tapes are corrected, so that the sum total of the control tapes is the total outstanding for accounts receivable at any given time. The control total on the numeric panels is checked with similar control tapes for the alphabetic panels, which in turn must

Photocopy made from typical panel. The copy is the reproduction of items on which periodic statements were sent to customers.

NAPSH STEEL CORPORATION			
NORTH KANSAS CITY, MO.			
ACCOUNTS RECEIVABLE ALPHABETICAL			
JUNE 15 1949			
A B C MACHINE SHOP	5/31/49	49-01200	945.57
A B C MACHINE SHOP	6/ 3/49	49-01500	1015.25
ACME FOUNDRY	6/ 8/49	49-01821	10.21
B & G SHEET METAL WORKS	6/ 9/49	49-01906	23.00

CAMERA



balance with the general ledger control.

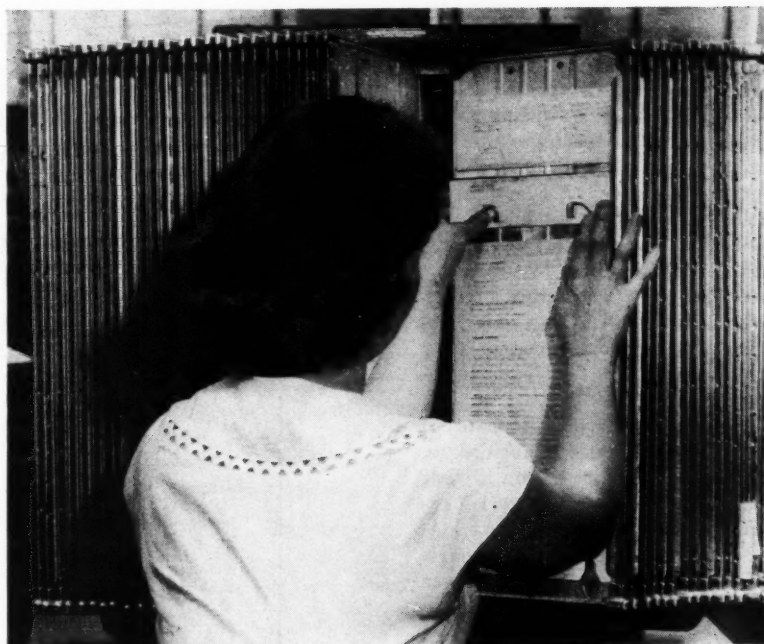
At the close of each month the panels of cards representing open items in the numeric sequence are photographed. This is done after the panels have been balanced to the other controls, and these photographs result in an age list of the company's accounts receivable at the end-of-the-month statement period. However, since the panel is maintained on a fully current basis daily, it is possible to have an age list of accounts receivable virtually on a moment's notice.

So much for the phase of the operations involving the panels with their cards in numeric sequences. The handling of the panels with the cards arranged alphabetically is as follows:

When the second set of cards taken from the invoice duplicating master copy is first sorted in alphabetic order by customers, it is then arranged on another group of panels, with the individual cards for each customer arranged by invoice number and date. Two blank cards are set into the panels between the card or groups of cards for each customer, again to make for ready identification.

As new invoicings are posted to the alphabetic panels, the control tapes are changed to include the new amounts, and the sum total of the tapes for all the alphabetic panels are balanced back to the tapes for the numeric panels and to the general ledger control of accounts receivable. By posting current billings daily and removing cards representing items paid, these panels always give a complete picture of the current standing of the customers' accounts, with open items only.

The alphabetic panels are photo-



Clerk inserting accounts-receivable card into panel which is mounted on stand having thousands of other items.

graphed on the 15th and on the last day of the month, the dates on which the billing section sends out accounts - receivable statements. Representing as they do the exact status of the panels on statement days, the photocopies made on those dates can be referred to at any time later on, should a question arise as to any item covered by a statement.

Advantages of the 15th and end-of-month photographing of the panels are:

1. There is need for a permanent record of the account status at the time of issuing statements; any other method of taking it off would involve manual copying, machine operation and checking, or proof-reading.

2. The semi-monthly operations provide supporting documents for the credit department.

3. The same photocopies are used by this section to post credit cards which the company maintains on each customer.

The extent to which the panel-and-photocopy procedure cut down paper work is perhaps nowhere more graphically illustrated than in its use in setting up daily control records of payments. As checks are received from customers in payment of their accounts, they are arranged alphabetically and then the corresponding cards are pulled from the open-item panels and placed in sequence on special panels.

Upon removal of a card from the
(Continued on page 49)

Packaging Specifications

offer a simple means of maintaining an orderly packaging system provided they are confined to essentials and tailored to fit.

A SET of packaging specifications accurately describing the packaging materials to be used for a product can mean new benefits to shippers. The problem of the packaging expert is to effect a final, ready-to-fill package having the desired characteristics, derived from commonly understood specifications.

In setting up a specification system or in modernizing one already in use, certain precautions must be observed. Do not start with a complicated system crowded with details. A simple system, one that is flexible as to differing specifications for different classes of packages, will give you an inexpensive, adequate system that can be expanded as experience requires.

If possible, assign one man to keep the specifications up to date. The actual work is minor if kept up and if the responsibility is centralized. Establish a definite understanding among all departments that any changes, however authorized, shall be brought to the attention of the man who revises the records. Also, all changes should be authorized by typed memoranda so that the revised specifications can indicate the date and the reason for change.

Companies interested in purchasing as well as in package specifications may feel tempted to include prices on specification sheets. Resist that temptation because this will double or treble the work of keeping specification sheets up to date. The variable of price can be handled very easily by issuing a separate list every three or six months. To simplify typing and to obtain a condensed list, it is only necessary to show a code number for each current specification and the corresponding price.

Use standard identification and nomenclature common to the industry supplying each package. Do this even though you feel it could be improved upon. By yourself, you can-

By T. J. NELSON

Packaging Engineer
California and Hawaiian Sugar Refining Corp., Ltd.

Revised 7-11-47

SPECIFICATIONS - FIBRE CASES

24/1 1b Brown Sugar Code 346.11

Size : 16 x 10 x 6 R.S.C. 2 inch tape
Material: 16-9B-16 200 Test, Kraft or Jute
Printing: Brown and light blue.

Revised to show change to oblong case for better warehouse palletization. Replaces sheet dated 10-3-46.

Issuing Department

Revised 3-2-48

SPECIFICATIONS - FIBRE CASES

24/1 1b Brown Sugar Code 346.13

Size : 16 x 10 x 6 1/4 R.S.C. 2 inch tape
Material: 16-9B-16 200 Test, Kraft or Jute
Printing: Brown and dark blue.

Revised to show change in case height (346.12) and new brand printing (346.13). Replaces sheet dated 7-11-47.

Issuing Department.

Specification Sheets Showing Chronological Development of a Typical Package.

not effect such a change in terminology, and your specifications are certainly not the place to experiment. Be sure to acquire the literature giving these standard terms, such as the paper industry's *Dictionary of Paper*.

The exact form or sheet selected for the entry of specifications should not be a matter of great concern. The basic requirement is simply that the method selected permits both revision and elaboration as experience indicates. Revision of specifications is illustrated in the forms accompanying this article. Note changes in height of case, printing, and code number. Specifications forms may range from simple loose-leaf

sheets as small as 4 x 7 in., up to the many-paged pamphlets used for government purchases. Copies are made for reference by the suppliers. In fact, the specification sheet may serve as a source of information, which when abstracted and appended to term contracts, becomes another form of specification.

There is one other desirable step to take in cataloging or abstracting complete specifications. This is to designate a code number for each item. At present, the government, for example, uses a "JAN" numbered series for various classes of food packages and the Federal Standard Stock Catalog. (Continued on page 39)

HOW TO DISTRIBUTE

This is an introduction to the economics of distribution, in three easy lessons. Don't let the word "economics" scare you. It's informative and strikes home at your everyday problems. Lessons II and III will appear in later issues.

By ARTHUR M. MARSHALL

THE economics of distribution is a subject which has grown steadily in interest as both industrial production and transportation have increased, until today it is a factor of extreme importance in the American economy. In the early stages of American industrial and economic development the greatest concentration of thought and effort was on production. The production processes, which include research, engineering and manufacturing, have reached an extremely high degree of efficiency with the result that actual and potential production of American industry have reached staggering proportions. The same effort and attention were not given to the transportation, distribution and delivery of industrial products and it is a fact, accepted by students of industry, economics and transportation, that one of the principal problems confronting the sound development of American economy is distribution and delivery for consumption.

A statement of the House Interstate and Foreign Commerce Committee issued at the close of 1948 and dealing with the National Transportation Policy took cognizance of claims that for 25 years the United States has lacked an integrated transportation policy and that such a lack has continually hampered the free development of transportation in this country. The statement continued by recognizing the necessity of adapting our laws and administrative practices to meet present-day and future economic and competitive conditions.

While this statement was intended to refer especially to the various forms of transportation facilities and their regulation in the public interest, its recognition of the essential function of transportation and its close relation to the national welfare is particularly noteworthy. This article will endeavor to deal with the application of the various forms of transportation facilities to the distribution process and their relation to the growth and development of the whole economy.

Distribution is the result of the combined use of transportation and other facilities to accomplish delivery to the point of final consumption in the shortest time and at the lowest cost. The determination of which combination of facilities is most efficient and useful will depend on five general conditions. These conditions are:

1. Total cost;
2. Volume of traffic;
3. Required delivery time as a result of competition, perishability or other factors;
4. Packing requirements;
5. Available facilities.

Added to these considerations are the new requirements of the so-called "Basing Point Decision" handed down by the United States Supreme Court in the case of *Federal Trade Commission v. The*

Cement Institute, et al., 333 U. S. 683 and related cases. In that case, the Court in effect declared the basing point system illegal, and in the absence of new legislation there has arisen a question of the effect on transportation, distribution, and selling practices should a price structure f.o.b. point of manufacture be required. As a result of that decision, as well as concomitant with it, basic changes in the distribution process are already beginning to appear. These changes include the actual or prospective removal of industry to points which are either closer to major sources of supply or to major marketing areas, depending on which source involves the greater proportion of total transportation or distribution cost. The subject of the effect of the Basing Point Decision on industry and commerce generally and proposed remedies and changes in the applicable law are currently receiving serious and urgent consideration by the Congress.

The term "distribution" as used in these articles may be defined as the movement of property from one point to another so as to give that property place utility. This definition is subject to qualification, for the reason that place utility

(Continued on page 52)



AIRCARGO TRAFFIC PATTERNS

(Continued from page 21)

tiles and apparel products. By contrast, agricultural and fishery products, in which it is hoped that a substantial volume of air cargo will develop, have higher average densities than the average of all commodities studied by the Tariff Commission. Only one percent of this group has an average density of 10 lbs. or less; only four percent have 15 lbs. or less, and only 11 percent have 20 lbs. or less. Oranges and lemons, for example, have a density of about 33.

The growth of all-cargo operations since the close of World War II has compelled the carriers to give increasing attention to the density problem. The non-scheduled carriers, faced with the necessity of obtaining higher payloads for planes devoted exclusively to cargo, have specialized in the development of traffic in apparel, dry goods, cut flowers, leather products, sea foods and meats. All of these products fall within commodity groups with relatively lower densities than those of machinery, electrical appliances and vehicle parts, the most important commodity groups from which the certificated carriers draw their cargo traffic. Concentration on low-density items, particularly when coupled with high value, appears to be the path that promotional activity in air cargo should take as offering the best possibility for steady

development. This thought has recently been borne out by the Civil Aeronautics Authority, whose estimate of air cargo potentials is shown in the last column of Table I.

It should be kept in mind, how-



The Palo Alto Transfer and Storage Co. figured prominently in the opening of the West's first municipal helicopter landing field at Palo Alto, Calif., early in July. To demonstrate the practicability of the "helicopter", one of the three United helicopters taking part in the inaugural ceremony landed on the roof of the Palo Alto Transfer and Storage Co.'s main warehouse building and picked up a Red Cross package of emergency medical supplies. The Red Cross maintains an auxiliary storage point at the company's warehouse. In the close-up photo, Sydney Vandervoort, secretary-treasurer and general manager of the firm, is delivering the emergency package into the hands of the Red Cross representative.

ever, that although low-density items offer good prospects for air cargo, their carriage involves extra

handling costs as a rule, and, when lower than the effective density of any particular plane, mean unused weight capacity. This not only accentuates the problem of obtaining a proper "mix" of commodities for maximum efficient operation in air cargo traffic, but stresses the need for radical changes in plane design, which might substantially increase effective density.

The present pattern of air cargo traffic indicates that a full payload of consumer goods is more valuable to the carrier than a full payload of producer goods. The inauguration of all-cargo operations, compelling consideration of the value of a full plane-load of commodities as distinct from the value of commodities in a given cubic foot of space, therefore, directed a concentration of promotional activity into the consumer-goods field. This is strikingly illustrated by the differences in relative importance of commodities hauled by the certificated and non-certificated carriers. The former, using combination planes for most of their cargo operations, and hence not too much concerned with the density factor, have a commodity distribution pattern closely resembling those of pre-war air express. By contrast, as Table I shows, the non-certificated carriers, with their all-cargo planes, have derived al-

(Continued on page 41)

No More Creases

Air-truck teamwork irons out costs and speeds apparel marketing.

SSLICK AIRWAYS, INC. has just started an improved method of shipping garments by air from New York. Taking a leaf out of the experience of some Western truckers, Slick had its truckers outfit their equipment with steel bars, to hold batches of dresses on hangers. These dresses are grouped in bags (specially designed by Slick), eliminating folding and making handling between factory, truck, plane and destination much easier. Faster shipment means



smaller time differential, a vital factor in getting goods to market in these days of fast order, fast delivery, fast sale. The airline figures that easier packing and handling, plus elimination of hang-out period plus steaming and pressing, have cut time and costs, with ultimate savings going in large part to the retailer. Montgomery Ward & Co. shipments were among the first to go out under the new distribution system.

You can't afford an earthbound business!



For faster turnover . . . more volume . . . greater profits . . . use

AMERICAN AIRLINES *Airfreight*

In this buyers' market, you *can* streamline your distribution and reduce marketing costs through regular use of American Airlines Airfreight. By cutting shipping time to *hours* instead of days, manufacturers can meet day-by-day demand without burdening outlets with cumbersome inventories . . . retailers can sell a complete line with a minimum of stocks on hand . . . fast-moving items can be replaced *overnight* . . . retailers and manufacturers can obtain quicker

capital turnover through faster *merchandise* turnover.

Through the elimination of many "hidden distribution costs," Airfreight can make shipping more economical, in many cases, than slower means of transportation. Whether you're a shipper or consignee, you can't afford to overlook this great opportunity for economy of operation — by using American's Airfreight on a day-in, day-out basis.

ASK ABOUT AMERICAN'S AIRCONOMY PLAN

Your doorway to new-day management

Ship by air

Let Airfreight set the tempo for your entire business. Open new markets, expand old ones. Get merchandise to market *when it's wanted*.

Travel by air

Save valuable man-hours by traveling regularly by Flagship. Multiply personal contacts. Get more done with *less* time "on the road."

Mail by air

Shorten order-to-delivery-to-payment periods. Get re-orders more quickly. Send out field instructions faster. Streamline accounting.

AMERICAN AIRLINES

AMERICAN AIRLINES, INC. • AMERICAN OVERSEAS AIRLINES, INC.

AIR MAIL THIS COUPON TODAY

American Airlines, Inc., Department N,
100 East 42nd Street, New York 17, N. Y.

GENTLEMEN: We are interested in your AIRCONOMY PLAN and would like to find out how it applies to our business.

NAME OF FIRM _____

NAME OF INDIVIDUAL _____

ADDRESS _____

TYPE OF BUSINESS _____

CHAIN REACTION

(Continued from page 15)

in and told the truckers to do this and do that. Well, the carriers are just begging for the same thing to happen again; and some of the very fellows who say this isn't the time are the ones who talk the loudest about private enterprise and individual initiative.

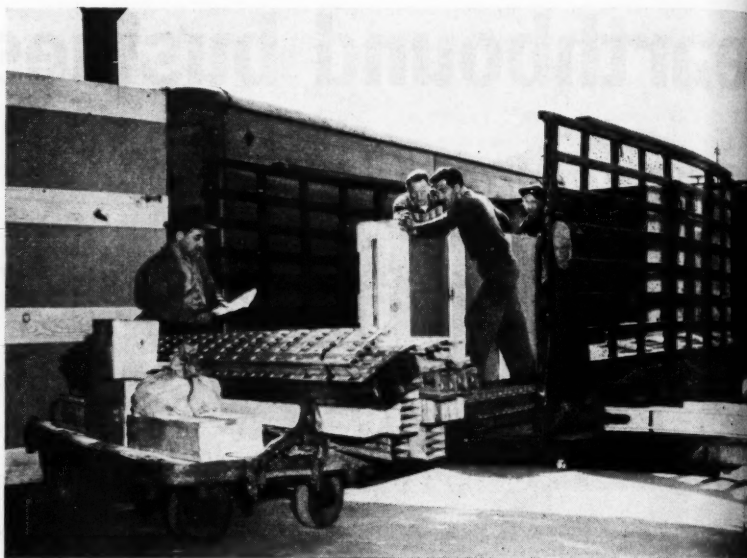
If private enterprise and individual initiative are to mean anything, NOW is the time to do something. It doesn't mean trying to put a half-baked idea into effect right now; it means hashing it over, taking steps to meet anticipated difficulties, getting a plan on paper, *doing something*. Not just waiting. The common carrier business won't always be this slow. Sooner or later it's going to become awful tight. And the smart fellows who are only thinking of getting a contract and won't worry about 1950 or what the rest of the industry is doing are likely to be very, very sorry.

2. Local and line-haul operators must cooperate more closely by feeding business to each other with that idea in mind.

More Utopia? Not on your life. Sure, the people in the common carrier field know that in some areas the carriers are claiming that local carriers are charging too much and are said to be putting in split delivery rates or making "plus charges." That is, the over-the-road carriers are said to be doing local delivery by splitting loads, and are under-cutting locals by quoting low and absorbing the charges.

Not all the truckers feel that the local carriers are fair prey. Many, particularly the established firms, dislike the situation since it means helping to destroy the rate structure which has taken so long to build up. But they are having a hard time combating the situation, which is being attributed to newer companies anxious to keep up their end of things. Here we are face to face with a problem of trucking: low capital requirements and the temptation for marginal elements to come in and weaken what has taken so long to build.

Whether true or not, this is the antithesis of cooperation, and it



Unloading mixed freight destined for warehouse.

may well be asked how you can have more cooperation when you have carriers going after the business of cooperates. Wait; isn't this (if true) just another example of shortsightedness? The common carriers who may be doing this are just thinking of holding up their own end and forgetting that the local carriers have some ammunition of their own. Some of these boys are very influential in some communities and some long-haul carriers may find that they've been picking poison ivy instead of some nice shiny greenery.

Why not a little cooperation? Why not five per cent instead of 10 per cent? It's still profitable, and there's less chance of—well, poison ivy.

What are the main obstacles to cooperation between motor carriers? The foremost one is the tendency of most motor carriers to attempt to book, haul and hold all originated business for themselves. This is only natural, for each carrier wants to build up his volume to some maximum point. Frequently this turns out to be bad business, for he will book work which is impossible for him to service properly. The net result is that each carrier has a backlog of

shipments no matter how small or large, which represents transportation business to be done unprofitably for either the shipper or the carrier. Often this turns out to be unsatisfactory business for both. Carriers must learn to say no to work which they cannot service promptly and properly. Here is one point where a clearing house would work wonders. If such a department were set up by the tariff bureaus, the carriers would not have to turn down work and the shippers would be assured of efficient and prompt service.

The second big obstacle is the fact that the carriers have torn down the firm base of rate-making through publication and use of commodity rates. The whole question of commodity rates has been under fire for a long time. There is scarcely a carrier in the country who will not agree that, on the whole, commodity rates are unjust. With very few exceptions, none of them will do anything about it, for each one has his own pet rates which he wants to protect. Special ratings must go. Granted that by so doing every carrier will be hurt to some degree, but the final result will be that all will benefit. The

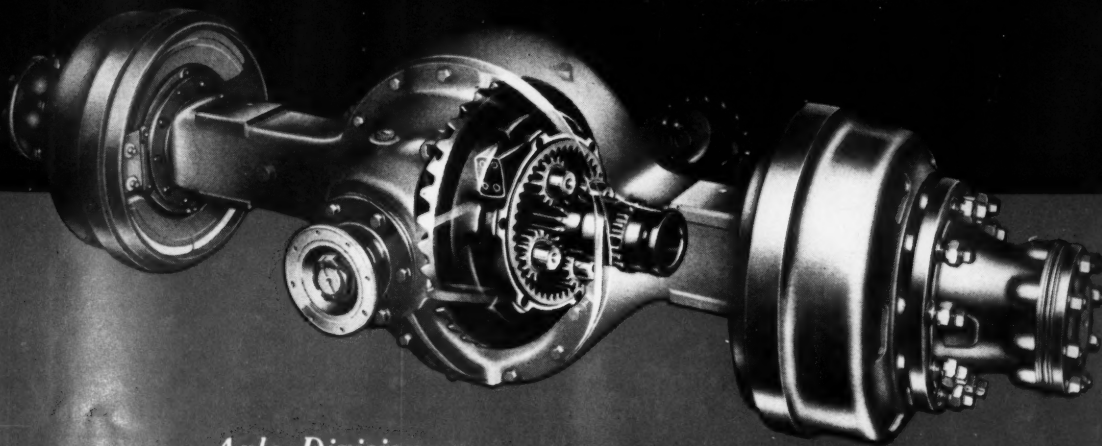
(Continued on page 43)

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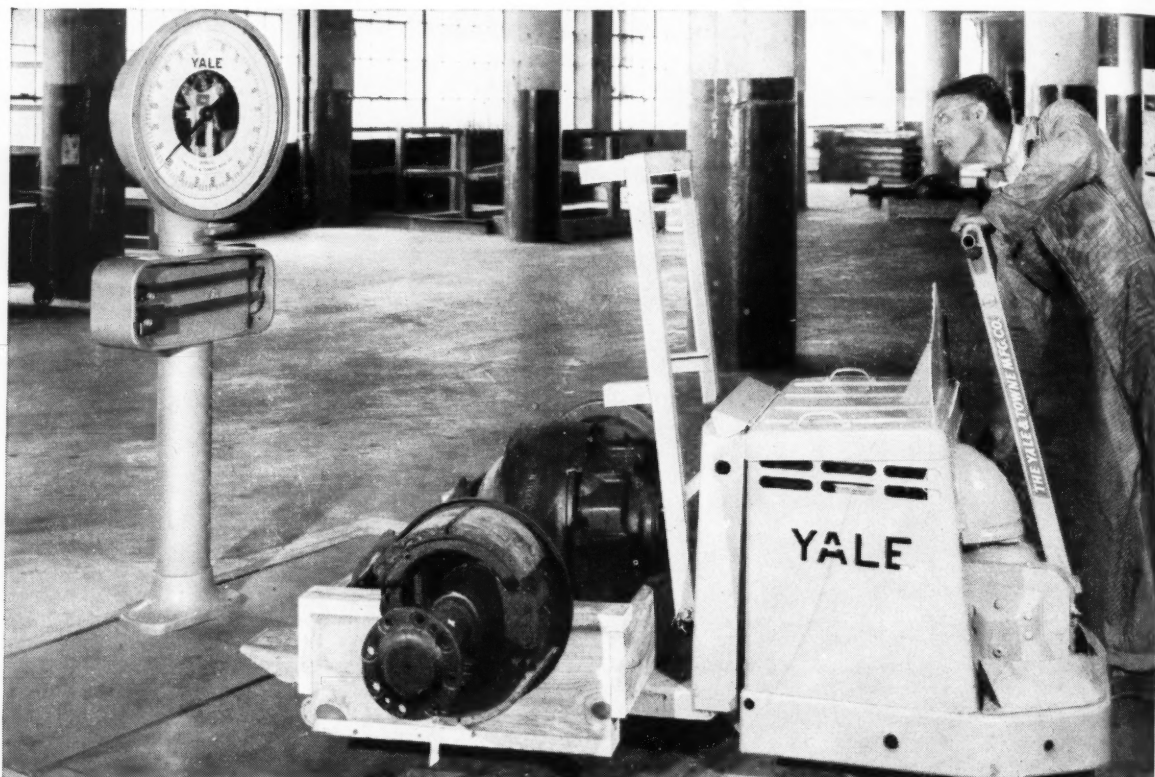
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HOISTS—HAND AND ELECTR. C •

TRUCKS—HAND LIFT AND POWER

SELECTING MATERIALS HANDLING EQUIPMENT

(Continued from page 23)

of the tonnage to be moved? Effects which each method of handling will have upon the company's break-even point should get study.

2. Flexibility—If for some reason the present processes become obsolete, can the equipment be used for other purposes? Or, should the containers be changed, what effect will that shift have upon performance and cost of each method? Can the equipment be used for other purposes besides those definitely prompting the purchase?

3. Standardization—Is the equipment similar to or identically the same as units now used? What effect will that have upon training personnel, servicing, etc.? Is the equipment standard production of the manufacturer or must it be fabricated for your purpose? In case it becomes obsolete for your purpose, will there be a ready resale market? What is the probable realizable salvage value after it has served your purpose or been worn out through use?

4. Company's Capital Set-up.—

It frequently happens that the most expensive method will show the lowest unit cost if it can be operated to capacity for the duration of its useful life. Which is more attractive to the company, a low investment now or a savings over an extended period of time?

5. Trend of Equipment Costs—Do you think that your capital charge will be more or less for equipment in the future? If you think prices are declining estimate the probable cost by each method if the procurement is postponed. Balance the savings to be made if the installation is made now against the probable savings in cost by writing.

6. Profit and Loss Statement—In case your company is showing a profit, any saving your recommendation will incur will increase the figure on the last line of the operating statement, which in turn increases the taxes to be paid. Calculate the effect which such savings will have upon taxes and give thought to deducting the increase

in taxes from the savings in operations which you have indicated.

7. Durability of Equipment — The ideal equipment is the unit whose useful life exactly equals the time required to do the work expected of it. Is any equipment you are recommending of higher quality than is necessary for the duty expected?

8. Replacing Labor—If your proposal involves a decrease in the number of men required, what will become of the men no longer needed? If the number laid off does not exceed the turnover, there may be no problem. But, if the number who leave the employ exceeds the number replaced, will management give that factor consideration?

9. Operator—Give consideration to the operator as well as others working in the area. Which method does the most to improve working conditions? Which equipment will be easiest to operate?

10. Safety—Discuss the various
(Continued on page 47)

Where Savings Lie

There is excess fat in some distribution items.

A. C. NIELSEN CO., Chicago, has prepared a book on a "Guide to Drug Store Marketing in the United States." This work was prepared under the auspices of the Committee on Distribution of the United States Council of the International Chamber of Commerce. The book was presented at the recent Quebec Congress of the ICC. Besides being very complete in its presentation of drug marketing problems, the chapter on Distribution, written by R. L. Sperber of the A. C. Nielsen Co., is so noteworthy and of such wide import that a section is reproduced below as a service to our readers:

"The complexities of the distribution process, together with the attendant high cost, constitute an ever-present challenge.

"Mass production methods have long since reduced manufacturing

costs (in some fields) to the general range between 12% and 20% of net factory sales revenue. Distribution costs—although also in a long-continued process of reduction—remain today at an estimated average of nearly 39%, on the same basis of factory sales revenue.

"According to a recent study by the Association of National Advertisers among 312 U. S. manufacturers in various lines of business, the distribution cost for branded drug products was found to be as follows—relative to manufacturers' total sales as 100%.

Total Distribution Expense.....	38.8%
1. Advertising and Sales Promotion...	21.3
2. Sales Expense.....	8.5
3. Transportation, Warehousing, and Delivery.....	4.5
4. Administration.....	3.0
5. Credits and Collection.....	1.5

"With distribution expense thus

running around 39% of net sales, while manufacturing costs correspondingly average 20% or less, it is self-evident that a 10% increase in distribution efficiency will accomplish a greater saving than a difficult and perhaps impossible further reduction of 20% in manufacturing cost. Efficiency in distribution as well as in manufacturing is needed to place U. S. drug products within the reach of still greater numbers of potential consumers, both at home and abroad.

"It was in recognition of the above situation that distribution and marketing research started early in connection with drug store goods and has continued aggressively for many years. Distribution cost has been the focal point of this sustained effort because:

1. The cost of distribution is high—higher for many drug products than the cost of manufacture.

2. Mass distribution in the drug field is still a relatively new science, holding many unknowns and hence

(Continued on page 92)

LA DISTRIBUTION ACTIVITIES

Classified and alphabetized for the convenience of the reader

Motor Carriers

A dignified New York newspaper was the scene recently of a battle between *Walter W. Belson* of the ATA and *James G. Lyne* who represents a publication devoted to railroad matters. Nothing new was added; it all started when the newspaper, in its editorial, actually took a positive stand on something unconnected with foreign events. The "something?" Why, the alleged fact that truckers are not paying their share of road-maintenance costs. Naturally, Mr. Belson jumped on that august sheet.

The above discussion makes one think of the immovable body and the irresistible force. Arguments were marshalled with spirit by both gentlemen; the arguments are well-known and require no repeating. One thought, certainly any newspaper should be wary of even seeming to imply that taxes ought to be higher on any segment of the economy, least of all the truckers. Almost everyone nowadays realizes that the superfluity of taxes is doing business no good. (Vitkauskas)

Bekins Van and Storage Co., Calif., which has always been keen on keeping its name before the public, received recognition on the front covers of two national publication recently.

R. L. Carnrike, Binyon-O'Keefe Storage Co., Fort Worth, has been elected vice president of Allied Van Lines. *D. J. Dalberg* of Westheimer Transfer & Storage Co., Houston, was reelected director, Southern Region.

Frederickson Motor Express Corp. has occupied its spacious new home at 3400 Hutchinson Ave., Charlotte, N. C. The company has mechanized the handling operations of its terminal by the use of fork-lift trucks which speed up the loading and unloading processes. Officers are *Mrs. Carolyn G. Frederickson*, president; *A. E. Clontz*, vice president and general manager; *W. E. Sadler*, vice president; *W. E. Price*, secretary-treasurer.

George T. Howard, Howard Van Lines, Dallas, was elected vice president, Western Region, of the Independent Movers and Warehousemen's Assn. at the latter's convention in Chicago.

Motor Cargo, Inc., Akron, has opened a new terminal in Warren, Ohio. Formerly sharing pickup and delivery service with Buckeye Transfer Co., Youngstown, Motor Cargo now does its own. (Kline)

Various states are authorizing long range highway planning studies. The National Highway Users Conference reports

that Idaho and Pennsylvania have created special legislative committees to make such studies. However, a bill for planning in Delaware, passed by the legislature with but one "no," was allowed by the Governor to pass away peacefully without signature.

North American Van Lines, Inc. has chosen *James B. Anderson* to manage its regional sales office in Dallas. Mr. Anderson was formerly in the line's Detroit office. (Vitkauskas)

In 1919, *Fred G. Redmon* started his truck business, which developed into a general contracting business. Also in 1919, *Frank C. Fairchild* acquired some trucks and did a general hauling business. In 1929, there was a merger of the two enterprises into Redmon-Fairchild, which later represented Aero Mayflower Transit Co. in nation-wide moving. The enterprise, now in its twentieth year, hauls heavy machinery, moves houses, hoists, and is engaged in merchandise warehousing and distribution. It is an interesting example of horizontal integration revolving about that powerhouse on wheels, the truck. The year 1949 is also the thirtieth anniversary of the entry of both men into the distribution field.

Truck output for the first six months is sharply down from the same period last year. This news from Detroit and environs comes as no surprise; it is well-known that the road haulers have been absorbing a lot of new equipment. These trucks may not be built like the old battle-wagons that grandfather used to know, but they still don't wear out in 60 days, overloading or no overloading. This would appear to mean that the lush truck-sales days are over, at least for the nonce.

The trucking Industry Insurance Advisory Committee, at a two-day meeting, endorsed a set of minimum standards for safe truck operation designed to aid both motor carriers and insurance interests in reducing losses from fire, theft and accidents. The minimum standards, developed and recommended by special technical consulting committees, embrace personnel selection and training, mechanical safety, fire prevention and cargo protection.

The Advisory Committee, composed of leading spokesmen for the trucking industry, insurance companies, and insurance agents and brokers, views the minimum safety standard program as the surest method of cutting losses and thus reducing insurance costs. Trucking companies will be urged to use the standards as a basis for reducing losses and increas-

ing insurability. Insurance interests will be urged to utilize the standards as a yardstick in analyzing motor carrier risks.

Ted V. Rogers of American Trucking Assns., Inc., chairman of the Advisory Committee, explained that the standards, if met by a trucking company, will indicate that an operation is "satisfactory" safety-wise, but the standards would not be considered mandatory. He also expressed the view that the standards would be a good basis for considering whether an operation is "standard, sub-standard, or above average safety-wise."

"Wallace Key Guide is off to a fresh start," we are informed by *Ralph Logan*, Fort Worth. Mr. Logan, who made a survey of Key operations, is now Public Relations Director and will be assisted by Policy and Advisory Committees in keeping close tab on Key operations. We also learn that "a new and improved basis for selecting" Key Stations and operators is now going on and this will permit closer cooperation between the service station, driver, operator and Key Guide. In the future, all operators using WKG will be charged a service fee, depending on number of units operated, and be required to remit a token fee for the Guides. "The Fleet Key to Economy," it is hoped by its sponsors, will now be on a firm and effective basis. It is also requested that helpful suggestions be sent to Wallace-Key Guide, 1117 Florence St., Fort Worth, Tex.

Railroads

The Car Service Division of the AAR reports a generally satisfactory car supply, though flat cars are tight and there is a shortage in "higher grade" box cars. In this connection, the Division reports that installation of new cars this year through June totalled 60,571, or greater than for the same period last year. It should be kept in mind that these installations represent orders placed last year, when railroad prospects and actual activity levels were very favorable. As the Division itself states, "The balance of cars on order and undelivered continues to decrease, both by reason of heavy delivery of new cars and by cancellation of orders previously placed."

Lastly, new installed cars for the 12 months ended June 30 were down in every category from the previous 12 months except box cars and refrigerators, which showed sizeable increases. In view of the fact that box cars are generally cheap items, and refrigerators are numerically minor, the dollar investment in

cars can scarcely be said to be holding up too well.

We are informed by the Port of Stockton, Calif., that both the Port and Consolidated Freight Forwarding Co. inaugurated July 25 a "vastly improved" service to California canners interested in rail pool car service to out-of-state destinations. The Port will be agent in Stockton for Consolidated in the receiving and shipping of rail pool car offerings from Sacramento and upper San Joaquin Valley areas. Consolidated has established new terminals, raising its total to four; offerings at these terminals will be combined for carloads, and it is expected that the resulting heavy tonnage will make possible increased frequency of car movement.

Air

Prices are scarcely volatile today, except in certain consumer-goods lines, but that minor volatility, combined with apparent prevalent fears of sudden downward adjustments, is proving a boon to air transportation. One airline reports a vastly increased second-quarter business. This airline feels that tighter inventory controls are contributing to the increased air carriage of freight. But there is probably more to the situation than just prices and inventories. Producers are more anxious today to satisfy department-store and other demand in the face of generally lower demand, and are apparently willing to get goods to market, not "next week," but exactly when wanted. Also, plants in the consumer field are increasingly working "from hand to mouth." In addition, demand consists increasingly of orders placed so as to hit the market at a calculated time.

In line with this the CAB reports marked increases in ton-miles of freight, express and mail as flown by 16 trunk airlines in April, compared with April a year ago. Mail tonnage was up 26 per cent, freight was up 79 per cent and express was higher by 21 per cent. The freight rise is indeed impressive.

Harlan D. Fowler of Whittier, Calif., has received a patent for a system to speed freight loading and unloading. The system involves a modification of wing location and provides that most freight space be forward of those wings. Cargo would be packed in sealed, removable containers, of the type now in use on trucks and rail cars. The planes would "dock" in a space between two platforms; these platforms would be at the same level as the bottom of the containers. The latter would come off the plane on one platform; other containers would go on from the other platform.

The idea appears really simple; but . . . It means construction of new-type platforms at a number of fields, and involves plane and probably container engineering. The prime requisite of the system will be cooperation among several interests, and this is probably where the difficulties lie.

Marine

Long-standing objections of water carriers that rail rates have been held unduly low are implemented by West Coast protests along the same line. Coastwise shippers want the ICC to require north-south rail rates comparable with those on east-west traffic. In support, they state

that before the war there were 14 sailings a week between California and northern ports; today, activity is sharply lower. (Vitkauskas)

The Packaging Committee of The Maritime Assn. of the Port of New York, under the direction of James B. Young, has completed a survey of outbound cargoes on 13 vessels in foreign trade routes. The ships will be surveyed on arrival at destination as well. Among the cooperating steamship companies are Barber, American President, Grace, Isthmian, Moore-McCormack and U. S. Lines.

Port interests in New York are reported to be concerned over a railroad proposal to raise charges on goods transferred from terminals to piers which are destined for carriage by coastal and inter-coastal ships. This proposal, if granted, would mean the imposition of a charge never before made. Rates for local cartage asked for by the interested railroads (excluding the D. L. & W.) are 11c. to Manhattan and 17c. to other port areas.

The San Francisco Chamber of Commerce is urging passage of H.R. 5356, a measure which calls for differential subsidies for U. S.-built ships so as to make their actual cost about the same as if the ships were built in foreign yards. The Chamber points out that this type of subsidy has been available in the past only for freighters on essential trade routes. The bill would make all new construction eligible for the subsidy, the only major requirement being that the ship be suitable for use in foreign trade.

Knowing that foreign trade routes, because of the differences in their requirements, demand practically every conceivable type and size of ship, trust the builders to find that every ship built is suitable for foreign trade! Government experts and others who may compute that 30 or 50 percent of all ships to be built would be suitable for foreign trade and thus conclude that the subsidy would never be excessive would be making a sad mistake; they ought to figure that the subsidy will be likely to cover close to 100 percent of freighter and passenger construction.

Other provisions of the bill are also designed to make shipbuilders happy. In view of the present economy "wave" in Congress, H.R. 5356 may be in for rough sailing.

United Fruit has just completed a new terminal on West Waterway, Seattle. The terminal employs gantry cranes, belt conveyors and other modern equipment for transfer of tropical fruit to rail cars. (Haskell)

Traffic

Julian Madison Fields has been elected vice president-traffic, of the Atlantic Coast Line Railroad. Mr. Fields will have headquarters in Wilmington, N. C.

Delta Nu Alpha, Cleveland Chapter has elected the following members: president, A. J. Maywhort, Commercial Traffic Co.; first vice president, Arthur D. Ott, True Temper Corp.; second vice president, H. F. Hite, Cleveland-Chicago Motor Express; secretary-treasurer, Luther G. King, Baltimore & Ohio Railroad; director, Louis W. Furman, Denver Chicago Trucking Co.

Henry J. Zimmerman, assistant to the vice president and the oldest employe in point of service in the B. F. Goodrich Co., has retired. Mr. Zimmerman was a member of the executive committee of the Great Lakes Shippers Advisory Board, a director of the National Industrial Traffic League and a member of the New York Traffic Club.

Owens-Corning Fiberglas Corp. announced appointment of R. C. Burgess as general traffic manager. C. C. Garberson, general traffic supervisor, is associated with the new appointee.

Radio Corp. of America, RCA Victor Division, has reorganized its traffic department with Richard C. Colton as general traffic manager; A. E. Gray and G. N. Peterson, traffic managers, general traffic division, Camden, N. J.; and C. H. Vescelius, traffic manager, tube department, Harrison, N. J.

Norman B. Lindstrom has been appointed traffic manager at the Springfield mill of Pillsbury Mills, Inc. He replaces Walter J. Swaja, who resigned.

T. L. Vogel is now freight traffic manager for Union Pacific Railroad, headquarters in Chicago. Mr. Vogel has been a traffic man for nearly 30 years.

Frank J. Barry has been recently appointed General Traffic Manager of Welch Grape Juice Co., Westfield, N. Y. Prior to this, he was with American Home Products Co., and is a consultant on transportation and distribution of food products.

Warehousing

W. J. Marshall, western manager, American Chain of Warehouses, Inc., has given up this position to affiliate with Chicago Candy Assn., Chicago, as executive director.

J. Leo Cooke, president, Merchandise Division, American Warehousemen's Assn., and former executive vice president, Lehigh Warehouse and Transportation Co., is now organizing his own company in the merchandise warehouse field. This organization will be located in the Metropolitan New York area. Mr. Cooke can be reached at 150 Broadway, New York City; telephone, Cortlandt 7-2913.

M. J. Tanzer has been elected executive vice president of the B & G Terminal, Inc., Grand Rapids, Mich., effective August 15. Mr. Tanzer was formerly active in the public warehousing business in Cleveland and Chicago.

Conklin Warehouse, Binghamton, N. Y., we understand, is a far cry from the chrome and steel-trimmed offices which are now the rage. Not that the interior of the front office was untouched for decades; Kenneth Conklin rebuilt the interior in July, 1948. What he did was to add an old Boston rocker, ancient pig-con-hole desk, butter churn, powder keg even a miniature railroad which toots

(Continued on page 57)



Fig. 5. A long-grab device, suspended from a special boom on a fork truck, is used to unload linoleum rolls at the Atlas Storage Co., Milwaukee.



Fig. 6. The addition of a rope and hook make it possible to handle long, crated shipments with conventional fork truck. Note protective device on truck.

HANDLING IN COLD-STORAGE AND MERCHANDISE WAREHOUSES

(Continued from page 19)

ments. The merchants Refrigerating Co. employs a similar technique in loading and unloading refrigerated freight cars at its Newark, N. J., plant. A portable roller conveyor, especially designed to travel smoothly over the car's wood-grating floor, is positioned against the merchandise to be moved. Goods are transferred to the pallet, which is carried by the conveyor. When loaded, the conveyor is pushed to the car door and the pallet is lifted off by the fork truck. An empty pallet is set on the conveyor and the process is repeated.

Accessory devices to be used in conjunction with standard materials handling equipment are of equal value. For example, Atlas handles rolls of linoleum—ordinarily a difficult materials handling problem—with a special grab device (see Fig. 5). For other long items, the company employs an ingenious hook-and-rope system. As depicted in Fig. 6, the hook, attached by rope to the front of the truck, takes a firm bite on the front of the crate. The truck reverses to pull out the crate and the load is lifted on the forks and carried from the freight car.

An adaptation of this technique is shown in Fig. 7, photographed at the North Terminal Warehouse Co., Chicago. The sling which

circles the heavy crate is attached to the fork truck. When the crate is moved partially out of the carrier, the sling is released and the fork truck picks up the load.

There is no denying that most warehouse buildings have seen better days. Save for a few selected plants of recent construction, cold-storage and merchandise warehouses were designed for manual rather than mechanical materials handling. In a sense, warehousing is a square hole, materials handling a round peg. Yet,

Fig. 7. Fork truck, with conventional sling, aids unloading of heavy crate from highway truck. Fork truck later picks up load and delivers it to storage.



as the foregoing examples clearly demonstrate, pegs can be squared and holes rounded. All it takes is ingenuity and initiative. And in this case initiative means black figures through lowered costs.

Still, many warehousemen have failed to mechanize. The task of modernizing the warehouse is relatively simple when compared with the task of modernizing certain warehousemen. Accumulated inertia, inadequate training in materials handling, distrust of the new—these are some of the human factors retarding materials handling progress. Certain materials handling "myths" have arisen as a result of these factors.

The myth of 100 percent mechanization. There are those in warehousing to whom the half-a-loaf philosophy holds no interest. Since we cannot mechanize completely, they argue, why bother mechanizing at all. This point of view is fallacious for two reasons. First, 100-percent mechanization is literally impossible in the majority of warehouses. Second, such a degree of mechanization is not always desirable. The belief that nothing should be handled manually is highly illogical. It infrequently works out in actual practice. In most warehouses called upon to

(Continued on page 45)

PACKAGING SPECIFICATIONS

(Continued from page 28)

logue series of code designations for thousands of items.

The simple yet effective system used in coding sugar-package items in my own company can be used almost universally. Two numbers separated by a period or decimal point are used. One number is permanently applied to a specific item and the second number is increased by each successive change made in the specification.

Let us say that numbers 300 to 399 are set aside for fiber cases. In this series, the group 340 to 349 inclusive is reserved for a particular group of cases, such as 24-lb. items. Number 346 would be a specific case, such as brown sugar. Now assume that 12 changes have been made in this item since it was adopted; today's code, therefore, is 346.12 in the records. Next month, if a small change in size is made in one dimension or if we incorporate a compression-test figure in the specifications, the code, reflecting this change, will become 346.13 in all records.

This flexibility for recording changes from time to time, either in the specifications now on the books or in the addition of new items in an existing series, is a prime requisite of any good specification system.

The value obtained from specifications is limited only by the use made of these specifications. If a company is only using them in the daily routine of ordering materials, there is undoubtedly a passing-by of other interesting and valuable functions. If to date a specification system has not been set up, remember that the year-round cost to do so is very slight, and that there are few other activities in the packaging field that give as great a return on the investment. Have copies of these data available for everyday use in studies on quality improvement, economy programs, and in the coordination of your activities with those of other related industries.

The job of writing specifications is something that cannot be dele-

gated very easily to an outside consultant or commercial laboratory. If your operations are not large, your routine tests and research may sometimes be handled more efficiently by an outside firm. But no matter how small or how large your business, your specifications can best be handled right in your own company.

The values of specifications in everyday use can be divided into two distinct groups: tangible and intangible.

Tangible Values

Tangible values include greater accuracy and the facilitation of material receipt from new sources of supply. Accuracy is of extreme importance and probably typifies the popular concept of the function of specifications. If a supplier is given a concrete specification to work on, then guesswork is eliminated on his part and confusion on the supplier's end is also decreased in the event he has changed his factory supervision.



John L. Keogh, president of Buffalo Merchandise Warehouses Inc., has disclosed his company's recent purchase from the government of over 400,000 sq. ft. of additional space in the former Pierce-Arrow property. This property is adjacent to existing facilities at 1695 Elmwood and Great Arrow Ave., Buffalo. This raises to six the number of Buffalo holdings operated by Buffalo Merchandise Warehouses Inc. The acquisition of the Pierce-Arrow space in several buildings brings to more than 700,000 sq. ft. the amount of space the company occupies in the Pierce-Arrow plant and to 1,380,000 sq. ft. the amount for all its Buffalo facilities. This includes the Elk Market Terminal. The additional facilities are of reinforced concrete and are completely sprinklered.

Through specifications, your manufacturing department is able to request the precise materials desired for a package and can confidently assume that the purchasing department's order will cover these needs. The purchasing department in turn has only to list quantity and code, with an obvious saving in time. Intra-company and inter-company correspondence is brief and to the point, and there is always a ready basis for discussing changes that might be prompted by sales, manufacturing, or traffic problems. Also consider changes in the supply picture, for almost everyone engaged in packaging these days has made some changes other than by choice or engineering study.

New sources of supply and substitute materials inevitably bring up the question "What are we using now?" Besides answering this question, well-drawn specifications will stress the nomenclature, or colloquialisms peculiar to that industry. Thus armed, you will be understood immediately if you speak of nine-point board to a fiber-container man or of a pound of tin per base box to a can manufacturer. A good grasp of expressions and terms peculiar to each industry you deal with is essential in saving time. A little time spent with authentic literature or catalogues is certainly worthwhile, even in a buyer's market.

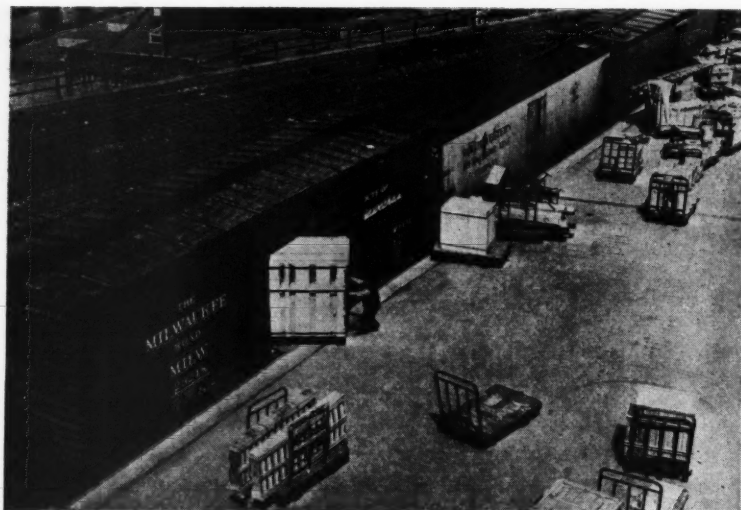
Intangible Values

Turning now to the intangible values to be found in specifications, one can find numerous possibilities for time saving and cost saving.

First, consider something within your own company or sphere of interest. A well-drawn set of specifications will serve as an admirable basis for training junior personnel in the whys and wherefors of packaging. For senior members in an organization, a loose-leaf book tucked away in a desk drawer gives the answer to questions you once could master without hesitation.

Junior personnel will next learn to check work against the speci-

(Continued on page 46)



Loading freight at New York depot.

Carrier Liability

By HENRY G. ELWELL
Traffic Consultant

"... A shipper can collect a claim against a railroad even in the face of the 'shipper's load and count' clause in a bill of lading if he can prove carrier negligence."

(Editor's note: This article by Mr. Elwell presents in concise form some legal elements entering into the problem of S L & C and then proceeds to explore, with interesting citation of actual cases, the practical side of the problem. S L & C is not all law; by a long shot. Primarily and basically, it is the human element that counts, and makes Shipper's Load and Count what it is today.)

THIS bill of lading carries the notation 'S. L. & C.' What does that signify?" inquired Harold West, production manager of the Morton Mfg. Co., as he gave the document to Jack McCormack, free-lance traffic manager.

"It means 'shipper's load and count,'" explained McCormack. "The term is used in a bill of lading to show that the shipment was loaded and counted by the shipper, not by the carrier transporting the articles. Such an endorsement is not unreasonable or unlawful."¹

"For all that, on what authority can such wording be employed?" West demanded.

"The bill of lading act," McCormack

replied, "authorizes common carriers to insert in bills of lading the words 'shipper's load and count,' or other words of like import to indicate that the goods were loaded by the shipper and that the description was made by him. If such notation is true, the carrier is absolved from liability for damage caused by improper loading, or by the non-receipt or misdescription of the goods."²

"Does that apply in the event the bill of lading has not been signed by the shipper?" West questioned.

"A bill of lading signed by the carrier, delivered to and accepted by the shipper without objection, in the absence of fraud," responded McCormack, "is a contract and binds the shipper, though not signed by him."³ A bill of lading becomes binding upon the shipper by his acceptance without himself signing it. He is presumed to know and accept its conditions."⁴

"Of course the phrase you mentioned is confined to bills of lading covering only carload shipments," commented West.

"By no means," exclaimed McCormack. "Such an endorsement as 'In apparent good order. Shipper's

load and count,' is authorized by the bill of lading act where goods are loaded by the shipper, and are not restricted to carload shipments."⁵

"Even so, the matter of carrier liability bothers me," West rejoined. "I believe you stated that a carrier is released from liability where 'S. L. & C.' is inserted in a bill of lading."

"I'm sorry if I failed to make it clear to you," said McCormack. "Permit me to repeat; 'the carrier is absolved from liability for damage caused by improper loading, or by the nonreceipt or misdescription of the goods.' Note that a carrier does not escape responsibility for any negligence on its part."

"I see the point," West acknowledged. "Assume, then, that a shipper can prove carrier negligence where the notation 'S. L. & C.' has been properly used."

"Common carriers cannot secure immunity from liability for their negligence by any sort of stipulation," McCormack answered.⁶ "On the other hand, in the Federal courts, if it is shown that the loss was occasioned by an exceptional cause, plaintiff (shipper or con-

(Continued on page 48)

(Author's Note: Names of persons and companies are fictitious)
¹ See 19 I. C. C. 513.

² See 78 I. C. C. 737.
³ See 234 I. C. C. 105.
⁴ See 166 Fed. 328.

⁵ See 168 I. C. C. 549.
⁶ See 228 U. S. 177, 57 L. ed. 787, 33 Supp. Ct. Rep. 474 reversing 13 Ark. 186.

AIRCARGO

(Continued from page 30)

most half their cargo from consumer goods (textiles and apparel).

Recently, on the basis of an analysis of the present position of air-cargo, the Civil Aeronautics Administration examined those basic attributes of commodities which are most relevant to measurement of their aircargo potentialities. Two of these, density and price, were found to be basic commodity classification criteria for this purpose. Density and price together measure the relative value which can be put into a given amount of space. Applying their aircargo susceptibility ratings to various commodity groups established by the U. S. Bureau of the Census and other governmental agencies, the CAA estimated that, during the next few years—the developmental period of aircargo—the percentage of en-planed cargo attributable to each would be as shown in Table II.

There are, of course, differences within commodities in each of these groups which modify the classification based primarily on density and price as it is. Some of these differences are: (a) geographic concentration of source of supply; (b) the average distance hauled as a measurement of the market area; (c) perishability or seasonality; (d) gross margin as a measurement of the extent to which a commodity may absorb relatively high rates.

Of the two factors, density and price, it is difficult to say which is the most important. If they are used as a rating method, one result is a comparative measurement of the value of a given commodity per cubic foot of space. Another result is a measurement of the value of a full plane-load of a given commodity. There is, however, an important distinction between these two rating scales since value per cubic foot is important in connection with combination passenger and cargo loads and mixed cargo loads; but would not be a good rating scale for a full plane-load since the effective density of the plane must be considered in relation to the density of the commodity involved.

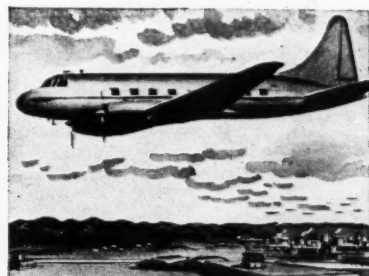
How SPEED helped catch "bugs" in the lacquer



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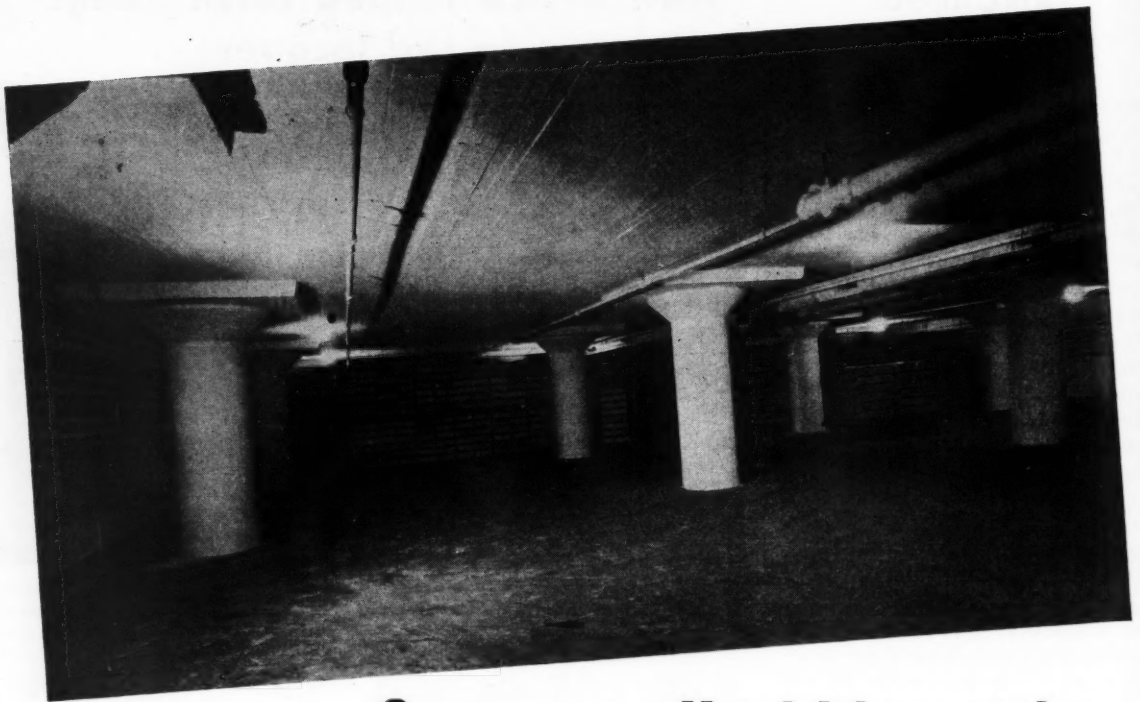
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Space Utilization

requires a scientific approach involving the distinction between "potentially vacant" space and "actually vacant" space. In addition, monthly inventories of space utilization are highly important.

MOST of these remarks deal with storage, particularly with control of storage-space by operating personnel. Mention will be made of certain items connected with layout and packaging but, in the main, stress will be laid on the control of storage-space. However, some of the suggestions concerning storage can be utilized in other phases.

Some general recommendations may seem obvious. This one, for example: Get rid of every unneeded article. That's rather obvious, yet it is surprising what one finds—particularly the amount of *usable* space that can be salvaged.

What shall we look for? Trash, scrap, obsolete or unneeded equipment (I once saw an entire basement full of such equipment), overstocks of slow-moving or unnecessary materials and supplies and larger stocks than necessary of active materials and supplies.

By **W. W. PHILLIPS**
Manager, Raw Materials Handling
Eli Lilly and Company

These last two items, overstocks of materials and supplies, may represent a fertile field for space-making. Remember that storage costs can eat up the value of the materials stored.

Coordinate production planning, stock control, and purchasing. An even flow of materials through receiving and storage requires less space than do peak shipments. An even, unbroken flow through processing requires less stocks of semi-processed goods.

Plan storage. Get all the facts before attempting a layout.

About packaging. This is a tremendous field, one closely related to materials handling generally. Here are a few examples embracing packaging and space-utilization.

Bottles were received in corrugated boxes which did not fit pallets too well. Four of the 20 boxes were placed on their sides on the pallet. The pallet held 20 boxes in all.

It was found possible to change the pattern of the pack within the carton. While 15 dozen bottles were still packed in each case, the dimensions of the case were changed so that 24 cartons could be placed on a pallet. This pallet was loaded to the same height as the one with the old-style cases, but the new load was 30 gross as against 25 gross before. The space made available on this particular item was equivalent to about one carload.

Another factor in packaging
(Continued on page 44)

CHAIN REACTION

(Continued from page 32)

trucking industry needs business, but at favorable rates which allow a fair margin of profit.

3. Closer cooperation between both types of carriers and warehousemen. The carriers must stop looking on themselves as in the service field, and on the warehousemen as being in production or sales or some such outlandish thing. Warehousemen are in a service industry, period. So are the carriers. They have interests in common. Why not cooperate?

The question is—how? Every transportation man and every shipper should be fully acquainted with the possibilities of the use of public warehousing to reduce transportation costs. No longer do warehousemen think of carriers as detrimental to them. No longer should carriers think of public warehouses in archaic terms.

You have all read in the papers about the North Atlantic Defense Pact and the methods that will be employed to effectuate the work-

ings of this pact. Perhaps what we need in distribution is a joint board of chiefs of the various branches of distribution to guide and counsel us. We need a board made up of representatives of railroads, steamship lines, motor carriers, warehousemen, governmental agencies and the shipping public, not groups such as are now in action; each engrossed in its own particular problems, but a really representative joint board of distribution. The A. T. A. and the Association of Railroads by themselves scarcely fill this bill, nor does the ICC—the first two because they are so basically opposed to each other, and the ICC because it is regulatory and not a counselling body. That is the broad aspect of cooperation in distribution. It is not impossible to have the leaders in all branches of distribution sit down at a round table to discuss and make recommendations on better ways of effecting distribution. Regulation and the public should

also be represented there to protect the rights of the shipper.

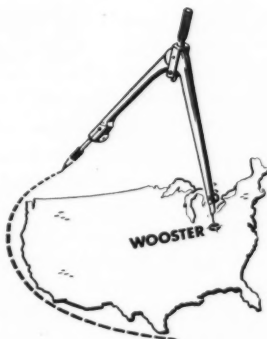
All of the above is based upon the assumption that it would be possible to have cooperation between all forms of distribution. Suppose that we cannot get this immediately. How can the motor carriers help themselves? First by cooperation among themselves. Next by working with the warehousemen. Then by using the facilities of other types of carriers to supplement their own services. What we have to do is to keep trucks rolling fully loaded, not half loaded.

To do this, selling must be the first consideration of every concern. To sell properly, we should use all of our facilities and all of the rights and privileges granted us by law. We compete directly with the railroads and the water carriers for business, but our job is to not only compete with them but to use them to advance our own services. Now, more than ever before, it is imperative to find ways and means of broadening our operations and gaining every benefit possible from cooperative effort.

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WOOSTER,
OHIO
Established
1860

SPACE UTILIZATION

(Continued from page 42)

(bottles) is that the diameter of a bottle at the time a package is designed may be made just a little larger or a little smaller so that it can be packed into a carton that will fit a pallet. Design should take into consideration space utilization along with all other factors.

There was an excellent article on this in the November, 1948, issue of *DISTRIBUTION AGE*. The title of the article is "Packaging Teamwork." If the reader hasn't read it, it is strongly urged that he do so.

Another type of package that we have been able to improve space-wise is fiber drums. We have found that four 20-in. x 30-in. fiber drums per pallet gives us more storage cube per pallet than any other 30-in. drum. We use a 42- x 48-in. two-way pallet. We found at first that four 20-in. (diameter) drums were better than three 23-in. drums. We wondered if five 18-in. or six 16-in. would make for further improvement. It was found that four 20-in. drums gave us maximum space-utilization.

In developing the warehousing discussion, a consideration of the development of Army warehousing is pertinent. Before World War II, Army warehouses were things of beauty rather than of utility. All materials were stored on the aisle. When an inspecting officer stepped into a warehouse everything had to be in perfect alignment. Plumb lines and sledge hammers for tapping stacks into line were in common use. The space behind the stacks was practically inaccessible and therefore of little use. Operations were slow.

The first change involved warehousing from the wall out. Operations were a little better; the space in front of the stacks had some utility, but it was difficult to use oldest stocks first and only one item could be stored in a row. The space in front of the stacks would probably be better called "potentially vacant" rather than "actually vacant." (We shall discuss potentially vacant space more as we go along, but potentially vacant space

is space that cannot be used without rewarehousing.)

The next improvement was the introduction of additional aisles. By taking more space for aisles, "potentially vacant" was converted into "actually vacant" and usable space. Short-depth storage appeared on the ends of the center section.

By modifying the storage plan, the occupied area of 2,672 sq. ft. on the old plan (with a potential of 3,776 sq. ft. but no actually vacant available for storage) was changed, as follows: the actual occupied was the same; the potential has been reduced to 208 sq. ft. There was actual vacant space of 1,888 sq. ft. available for storage. By creating more aisles, more usable space was created.

When small quantities are to be stored, the number of aisles must increase. When large quantities of high-turnover items are stored, the number of aisles will ordinarily be less.

If you know what your potentially vacant space actually is each month, you have information which will aid you in determining the efficiency of storage operations. Eli Lilly and Co. takes a space-inventory every month. This inventory shows actually vacant, potentially vacant, and net occupied. The principle of potentially vacant space can also be applied to shelving, bins, racks, tanks, tote boxes, stock-containers — wherever materials are stored. As an example, take a supply cabinet in an office. If there are several shelves, each one having a vacant space above it, more shelves can be added and the space required for an additional cabinet may be saved. The cost of the additional cabinet may also be more than the cost of installing additional shelves.

The same principle can be applied to stockrooms. Tote boxes are sometimes larger than need be, and so on. The size of the operation does not enter into it. In large operations, it is usually more difficult to see the over-all picture, and a definite plan of analysis must be adopted.

Management can give us good buildings and plant-layout can give us good layouts, but it is up to the operating personnel to use these facilities properly.

Building Association Morale

(Willis Warren, Wisconsin Warehousemen's Assn., offers this scintillating advice on how to improve association work. Mr. Warren's credo is somewhat shorter than when first penned; however, the spirit is still there.)

1. Don't attend meetings;
2. If you do, come late; the later, the better;
3. When the weather doesn't suit, stay away;
4. Always pick flaws in the work of other members;
5. Don't accept any office; criticism is easier on the outside;
6. Anyhow, get sore if you're not appointed;
7. Don't talk during meetings; talk afterward;
8. Hint that cliques are running the association;
9. Let the secretary or someone else get new members;

10. When banquets are given, say money is being wasted;
11. When they're not given, say the organization is dead;
12. If asked to sit at the speaker's table, modestly refuse;
13. If not asked, resign;
14. Don't pay dues if you don't get a bill;
15. If you get a bill after you pay, resign;
16. If possible, don't pay dues; otherwise pay late;
17. Don't tell the organization how it can help you;
18. But if it doesn't help you, resign;
19. Always look for something wrong; that's being constructive;
20. If everything else fails, blame the secretary.

HANDLING

(Continued from page 38)

handle all sizes, shapes, and varieties of merchandise, the inability to mechanize throughout is typical.

Materials handling can hardly be deemed to be properly applied when a fork truck or some other piece of equipment backs, turns, and twists its way into a crowded freight car to lift a load that could just as readily—and at lower cost—be moved by hand truck. If mechanization means that trucks with a lifting capacity of several tons are employed to handle trifling loads, little or no profit will accrue to the company. An example of proper use of mechanical loading and handling is seen at North Pier Terminal Co., Chicago. Paper-loading itself is largely non-manual. After hand-loading, the loaded wagons are hooked together to form a long train and are hauled by a truck-tractor to the warehouse entrance. Leisurely and at their own good time, two fork trucks transfer loads from

wagons to storage areas—largely mechanical handling throughout.

The myth of 100 percent palletization. No one denies the value of pallets. However, palletization is not a materials handling cure-all. In fact, forcing certain loads to conform to the pallet is often a mistake. Some commodities can with difficulty be palletized. Sides of meat are a good example. In one cold-storage warehouse, an attempt was made for a short time to store this commodity on pallets. Because of the product's irregular shape, however, stacking of palletized loads was difficult. In desperation, pallets were discarded and a new handling method instituted. Now, sides of meat are loaded by hand from carriers into four-wheel wagons with high side gates. The wagons are carried by elevator to storage and deposited, meat and all, until ready for delivery. Where unit loading with pallets is impractical—because of

shape and nature of product or size of shipment—conventional bins, into which goods are hand-loaded, are often found to be desirable. In addition, special fork trucks constructed to grab loads from sides have in many instances eliminated the need for pallets.

A good example of how non-palletization has resulted in greater efficiency is found at the Oscar Meyer & Co., Madison, Wisc., plant. By welding strips of metal to the bottom of metal bins used for handling cured meats, the containers were made accessible for direct fork truck handling. Were pallets used, only four (instead of five) boxes could have been stacked in the low-ceilinged warehouse.

Since palletization represents a considerable monetary investment, pallets should certainly not be user carelessly or indiscriminately.

The myths of bigness and high cost. A surprisingly large number of warehousemen have foregone mechanized materials handling
(Continued on page 52)

ESCORT TRUCKS

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All ESCORT trucks are sold on a money back guarantee. If not satisfied after fair trial, return for refund of full purchase price.

PACKAGING SPECIFICATIONS

(Continued from page 39)

cation records. This not only builds an atmosphere of accuracy, but gives the senior personnel the assurance that errors will be minimized.

Discovery of Errors

Checking specification records themselves against prior records and against past correspondence is a periodic activity that should not be overlooked. It is almost certain to bring out some of those minor discrepancies that inevitably creep in. Even major differences will appear to plague you; their detection before damage has been done can save many times the cost of the specification program itself. Discrepancies will usually be revealed when someone in your company or in your supplier's company suddenly notices that the decimal or some changing part of the code does not correspond to that on your latest routine orders.

Another value of specifications that can be tapped within your own company is the detection of duplication among stock items and the manifestation of needed changes to effect standardization of quality throughout a line. Those who have many items in their list of packages can expect to find, on occasion, two or three that can be combined into one with little or no change. Besides the nuisance value of multiple items, your purchasing costs will probably drop appreciably for the larger quantity. Moreover, you will avoid the embarrassment of being out of stock on an item that can be duplicated with something else. No doubt those who have followed the newspapers on unification of the Army and Navy have read of repeated instances of the foregoing duplication on a large scale. While most companies will not be able to equal the Signal Corp's reported elimination of 63,000 out of 220,000 items, this does emphasize the point.

Government specifications issued during the war on packages for food items taught the value of accurate specifications. There was

a succession of new package specifications, obvious improvements, new specifications, and again more improvements. At the time, there seemed to be confusion in all this. However, as one looks back now, it is obvious that the checking that became possible only after something was printed on the subject, in turn opened the door to improvement. This doorway to improvement, which is opened by a specification hopefully set up as being the "last word," gives us another major value that lies in specifications.

Cost Savings

A critical study of specifications can be explored within your own company or business but should go further than that. Acquaint your suppliers with these specifications and the suppliers in turn will undoubtedly be able to make



Grand Specialties Co., Chicago, has announced what it describes as a completely new type of portable pallet crane. The unit is said to combine extreme flexibility with bulky weight-handling capacity. The steel-plate pallet, which is 16x24 in. in size, is stated to be capable of handling up to 500 lbs. from floor level to a height of 5 ft, 6 in. It can be stopped at any intermediate height. Regularly supplied with a hand hydraulic lift, it is also available with a motorized hydraulic lift. A hand brake holds crane in desired position, preventing movement away from truck tail-gate, press, work bench, storage bin, etc. Model designation is 40 PC.

suggestions. Discussion may show, for example, that very small adjustments in the size of a carton will give a more economical trim at the board mill. Thus, a true container saving can be obtained without a sacrifice of holding capacity, durability or appearance.

Mutual Understanding

Business relations between seller and buyer will be kept on a sound basis if the seller can ship packaging materials that will not be rejected by the packing room. Mutually acceptable, typed specifications help the supplier produce material that will meet these specifications and give the packing room a yardstick with which to judge. Mutually understood specifications held by seller and buyer will avoid those irritating errors and will insure that correspondence is to the point. Here, too, a periodic comparison of records will disclose that over a year's time some minor differences have crept in.

After making these comparisons against your supplier's records, or in fact after making any changes in specifications, do not throw away the obsolete specifications. By all means, do remove the obsolete sheets, but place them in a permanent historical file. They will be an invaluable reference. During the war, for example, many sugar items were discontinued and some of these have since been revived. The former specifications can be found in a few moments; they give us an immediate basis for deciding how to reintroduce a package.

Warehousing and Handling

Another use which can be made of specifications, particularly those applying to fiber cases, 100-lb. bags, or similar merchandise, has to do with warehousing the finished product. Materials handling on pallets, in particular, calls for packages that fit well and give a tight load on the pallet. Joint efforts of the materials handling engineer and the packaging engineer will be expedited if precise data are available. They will not have to resort to obtaining

(Continued on page 53)

SELECTING

(Continued from page 35)

methods with the safety engineer and give thought to accident prevention.

11. Downtime — Which equipment is least likely to be out-of-order when needed? Which one will do the most to promote production?

12. Inventory—Value of inventory is an important consideration to management. What effect will each method have upon cost of goods held in inventory, whether it be raw materials, goods in process or finished goods?

13. Value of Repair Parts—Estimate the value and cost of storage for all spare parts deemed necessary to keep on hand.

14. Service Available — Consider the service talent and parts stocks maintained by the seller which are available to you when needed.

15. Post-Sale Advice—Does the seller provide assistance in perfecting the performance of the equipment after it is installed? Can one

expect to get continued assistance from the seller during the life of the equipment?

16. Usefulness of Container—Have you given consideration to the usefulness of the container to the customer? Will it be convenient for him to handle or will it cause sales resistance? Could it be improved to make the product more saleable? Have you checked with sales and advertising concerning "eye appeal"?

17. Charges to Operations—The total annual charges computed previously included an amount for depreciation based upon an established financial policy. This policy toward depreciation probably involved consideration of obsolescence, effect upon taxes, financial condition of the company, with also some thought of the wear and tear factor. Thought should be given to the probable useful life of the equipment and the charges which the accountant will make to opera-

tions after the book value is zero.

18. Supplier — Have you considered the vendor? Are the improved methods of shipping to you which will improve your receiving costs also helping his situation?

19. Carrier—What about the transportation company? From your point of view demurrage charges are items of cost to be avoided. But in addition to demurrage charges, are you delaying transportation equipment owned by others? Could you decrease "turn-around" time and thereby promote friendly relationships with the transportation companies serving you?

20. Breakage — Could deterioration and/or breakage be decreased? Have you suggested the method involving the least damage due to handling?

21. Inventory taking — Which method will best promote ease of taking inventory or even stock checking when necessary?

22. Space occupied — Providing and maintaining space is costly. Evaluate the space required for the installation and operation of the equipment.



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CARRIER LIABILITY

(Continued from page 40)

signee) assumes the burden of proving the carrier was negligent and that such negligence directly and approximately contributed to the result.⁷ So you see, the 'shipper's load and count' clause in a bill of lading merely protects the transportation company from any act of negligence by the shipper where the latter actually loads and counts a consignment. It places the burden of proof on the shipper."

"You referred to the Federal courts," interjected West. "Do you imply that claims for loss or damage cannot be brought before the Interstate Commerce Commission?"

"Exactly," asserted McCormack. "The commission has no power to direct payment of loss and damage claims.⁸ Claims against common carriers for loss to property are governed by general legal principles, and are determined by the courts."⁹

"That being the case, suppose two or more railroads are involved in the through movement of an 'S.

L. & C.' shipment. In such an instance which one is responsible for payment of any loss or damage if the shipper can produce definite proof of carrier negligence?" West asked.

"The initial carrier is liable," McCormack maintained. "A shipment having been made under uniform straight bill of lading for transportation of property from one point in one State to a point in another State the initial carrier was under statutory obligation to pay for any actionable loss occurring during the shipment whether on its own line or on that of any connection carrier."¹⁰

McCormack settled back with a smile. "There you have a simple statement of the legalities of the problem. How about some practical demonstrations of what it adds up to? How about the human beings and fallibility and compromise and negotiation? I can see that you want to get down to brass tacks.

"Let us start at the loading plat-

form. To a large degree, perhaps in more than half the cases, goods are loaded into freight cars directly by the shipper. The shipper has no obligation to count, but has the obligation, under the tariff, to supply all necessary bracing and to properly load so as to cope with whatever jolting and jarring and what have you is normally incident to transportation.

"Now I could talk about that simple little word 'normally' and show, first of all, that *normal* is anybody's guess, and so on. But you get the idea; here is one case where legal minds could spend weeks debating.

"Back to S L & C. This designation does not alter the factual liability of the carrier. What it does in substance is shift the burden of proof over to the shipper. This matter of 'burden of proof' is the real heart of the situation; but before I go into that, let me explain that a bill of lading is both a receipt and a contract. But when S L & C appears, it is not under these circumstances a receipt for a definite quantity of goods. It is a contract reciting that a shipment has been made but, as to number and condition of items and method of loading and bracing, the representations of the shipper are the sole pieces of information possessed by the carrier as to conditions existing.

"Now let us go back to the question of 'burden of proof.' The consignee opens a car, finds visible damage and notifies the railroad agent. The latter must then attempt to determine the cause of damage. Or goods do not appear to have arrived. The agent must find the chain of events resulting in failure of shipment to arrive. We can forget about concealed damage; it's not too important, whether it accompanies overt damage or not.

"Let us consider how losses could have occurred. Here is one case. A big shipper had 1000 cases of goods for carload shipment. He didn't have enough room to store all cases together, prior to shipment, but made one pile of 900 cases, and another of 100 cases. The checker counted both batches. He told the loaders what to handle and saw them start to load the cars,

(Continued on page 62)

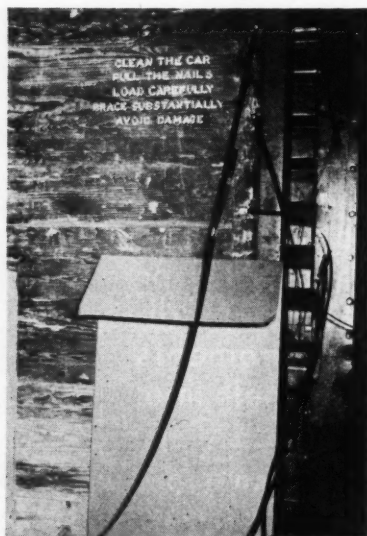
⁷ See 29 Fed. Supp. 593.

⁸ See 19 I. C. C. 513.

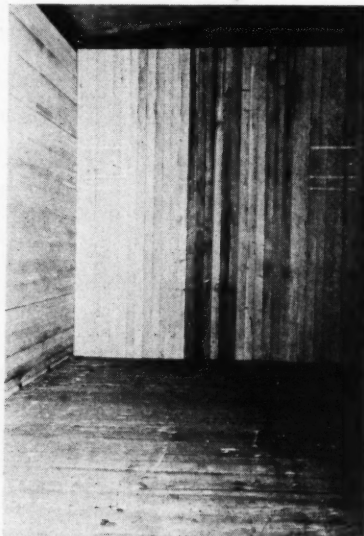
⁹ See 59 I. C. C. 459.

¹⁰ See 42 Fed. Supp. 239.

Adding Insult to Injury



Our May, 1949, issue of *Distribution Age*, page 38, carried an article by Henry G. Elwell which advised shippers to "Clean Those Dirty Cars." Since then, we have been in receipt of some photographs, specially taken for this publication by the Pennsylvania Railroad. We believe our readers will be captivated by one of the



accompanying photographs, which shows a close-up of a box car wall. In this case, as no doubt in many others, those responsible for unloading the car added insult to injury by leaving strapping nailed up next to a clearly stenciled instruction to "Clean the car." The other photo shows what a car interior should look like.

CARD AND CAMERA

(Continued from page 27)

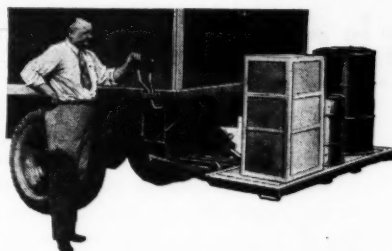
open-item panel it is stamped "paid," and if any discount has been taken by the customer, this is shown on the card in a designated position. The re-filing of the "paid" cards on the special panels results in a listing (again alphabetical and by consecutive invoice number and chronological date) of all of the items paid on a particular date. Photocopies taken off the panels then represent a full listing of items paid each day. These prints represent the supporting detail for posting in the cash-receipts journal of the credit to accounts receivable, the debit to discounts allowed and the debit to the bank account.

When this simple processing of the payments has been completed, a regular deposit slip is typed up for the checks to be deposited that day, in alphabetical order by customer. This deposit slip shows the bank transit number of the customer's check and the amount of the check. Thus, it is an easy matter to associate the net amount of the check deposited with the group of items being paid by that particular check, as represented by the photocopy of the items paid that day as shown on the special card panels.

When the photocopying and preparation of the deposit slips are finished, the cards are removed from the special panels and placed in file drawers in alphabetical order by customer's name and by consecutive order number of the invoices and chronological order by payment date.

Accumulated in the file drawers for one year, the cards representing paid items are then photographed on microfilm. The resulting 12-month payment performance records thus created represent a ready reference file of customer purchasers, and these microfilm files are used by both the credit and collection section and by the sales department.

So much for the mechanics of the "photographic bookkeeping" procedure. From the standpoint of the company's staff, the new methods involve little or no difficulty.



This Simple TRUCK LOADER

and UNLOADER CUTS DELIVERY COSTS 50%

More "LIFT GATES" in use than all others. Simplicity of design is one reason... Ruggedness is another. Extra features*—proved by 6 years of field experience—are more reasons why nearly all truck loaders and unloaders you see are Anthony "LIFT GATES." Write for literature, prices.



ANTHONY CO., Dept. 905, STREATOR, ILL.



*"LIFT GATE" rests on ground. No protrusions to prevent easy loading.



*Loads from all sides at all levels with "Quick Detachable" Ramp.



*Non-sloping—Gives "Level-lift" to avoid loads rolling or toppling off.



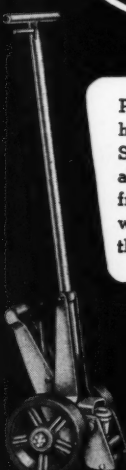
*One control raises, lowers stops or holds "GATE" at any height.



*Safety Latch locks up. "LIFT GATE" cannot be lowered accidentally.



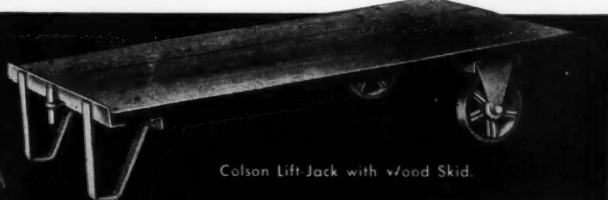
LIFT-JACK Systems Save Time, Money, Effort



Put new hustle in your materials-handling with Colson Lift Jack Systems. Through production, in and out of storage, on and off freight cars, one Colson Lift Jack with wood or steel platforms does the work of many conventional

hand trucks, saves time & money.

Other cost-cutting Colson equipment includes drum and barrel trucks, platform trucks, hand trucks and famous Colson load-floating wheels and casters.



Colson Lift-Jack with wood skid.

Write Today For Free 56 Page Catalog

THE COLSON CORPORATION

ELYRIA, OHIO

CASTERS • LIFT JACK SYSTEMS • INDUSTRIAL TRUCKS

It's up to the User

It's the purchaser's job to make proper use of scientifically designed packing-packaging materials. He shouldn't beef if he himself packed badly, or tried to save on materials in order to save pennies.

THE return of competition has forced the container industry to think of economy as well as strength, and this, plus the improved availability and quality of raw materials, has resulted in a very rapid improvement. Undoubtedly, a great many other developments are on the verge of disclosure. Intensified efforts are also under way to improve the handling and use of fibre containers.

There has been a distinct tightening up on the part of the Classification Committees in enforcing existing regulations. Most reputable box makers have no desire to violate these rules; now that raw materials of better quality are more available, the railroads have less reason for complaint. The regular reports of the Quality Group of Container Laboratories, Inc. show a distinct improvement in the Mullen test and other strength properties of corrugated containers. For example, their last report showed a new high average of 234 for the 200 test corrugated boxes from 74 participating factories. The fibre box industry is cooperating with the railroads through joint committees in a two-fold effort to develop performance standards and to institute an inspection service to see how shipments are arriving at destination. It is planned to keep these performance standards out of the basic Rule 41 and to cover them under specific committees.

For example, permission was recently granted to ship toilet tissue and paper towels in oversize, overweight containers with a guaranteed top compression test of 10# per perimeter inch. This is known as Package 215. Other new packages specify the use of V-board (Package 991 and Package 212).

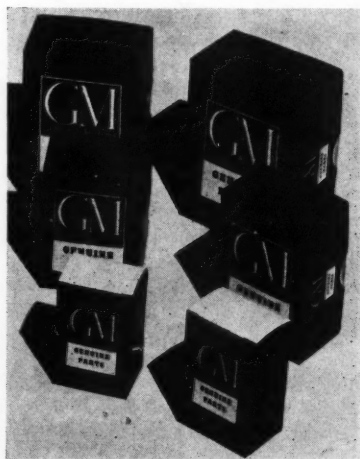
One of the most interesting new additions to the Classification is Package 994 which was promoted by The General Electric Company and which described a container for



Mullen Tester being used on board sample. This test is old but still basic.

the shipment of electric refrigerators. This container is made almost entirely of high test corrugated board and has been showing excel-

Family of cartons designed for various small automobile parts, made of Tuf-board.



lent results in shipment, to say nothing of very great economies.

That part of the Classification dealing with shipments of furniture has been completely re-written and the same is true of a number of other commodities. The requirements for glassware packaging have also been re-written, but in this case it was elected to leave them in Rule 41, although it is hoped that some day Rule 41 can be revised to form a set of basic specifications without reference to a specific item. Effective June 23, the Freight Classification will require specified drop tests for glassware other than glass containers and articles in glass.

Another indication that performance specifications are displacing material specifications was shown by a speaker for one of the largest soap companies at the Atlantic City Packaging Conference recently. He mentioned that they operate

This article was prepared and written by J. D. Malcolmson, Robert Gair Co., Inc.

only one Mullen tester to enforce Rule 41 compliance, but beyond that, most of their containers are specified on a compression test performance standard — without regard to what the corrugated boxes are made of. This same thought was repeated by the representative of one of the largest toilet tissue producers.

Light Weight Containers

It should not be inferred from the preceding paragraph that shippers and box makers are oblivious to tare weights. Actually, these weights have an important bearing on freight charges, and the jute industry is now carrying on concerted research under the auspices of the Jute Institute and the Institute of Paper Chemistry at Appleton, Wisconsin. The principal objective of this research is to bring the weights of jute liners down without loss of strength.

One of the methods which will probably be used in striving for this result will be a concerted effort to reduce minute sand and dirt spots which come from the raw material paper stock. These spots have a tendency to lower the Mullen test out of all relation to their actual weakening of the board so that compensation must be made by increased weight and higher average test. Additional help in this direction is coming from improved sorting of wastepaper and it is interesting in this connection to note that the Waste Paper Institute has recently adopted a new set of grading standards.

Materials

A modified V-box known as the VUS container has been developed for commercial and export uses. "V" stands for weatherproof board, "U" for underwriters and "S" for solid fibre. This box is now being accepted by Marine Insurance Companies without the usual penalty which is assessed on domestic fibre-board containers used for export. There have been sad experiences due to the misapprehension that a good domestic box will carry equally well to the ends of the earth.

Another development just announced is the so-called sulphur treated corrugated medium which

contributes remarkable rigidity to a corrugated box both at normal and at high humidities. This development has overcome the seemingly insuperable obstacles of lack of bending quality and inability to take glue. Apparently when the treated corrugating medium is incorporated into double faced board, the sheet will bend adequately and the heat of the corrugating rolls seems to drive the sulphur sufficiently into the board so that the surface of the corrugation tip accepts adhesive at normal production speeds. Corrugations have also been given increased rigidity by various other chemical and plastic additives as well as by greater care in stock preparation and fibre formation. Occasionally two sheets are laminated together before corrugating, contributing extra strength and rigidity. One of these is being advertised as the Duo-Arch.

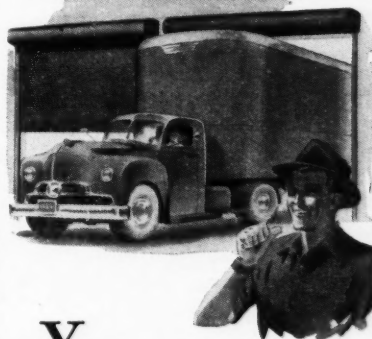
New developments in gummed joining tape for corrugated containers include the incorporation of glass fibres into a duplex structure, somewhat similar to the familiar Sisal tape. A pressure sensitive paper tape is available which is so strong that it cannot be torn in two by hand. It remains to be demonstrated, however, whether or not this tape will "creep" under prolonged tension.

Fabrication

Various testing laboratories have demonstrated that improved raw materials do not necessarily make a better corrugated box. It is well known that the best materials can be ruined by improper fabrication, but recently laboratory research has enabled this damage to be expressed in actual percentages. Perhaps the most vulnerable parts of the corrugated box are the corrugations themselves, and any carelessness in fabrication which damages or deforms these corrugations, inevitably leads to lowered compression resistance. Corrugations can be crushed in almost any stage of fabrication, including combining, slotting, creasing, printing and joining. The box maker is constantly in the dilemma of trying to produce the best possible printing

(Continued on page 54)

**"These Kinnear
Rolling Doors
sure do open
out of the way!"**



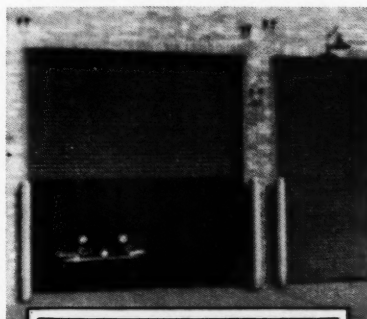
You clear the opening completely — from jamb to jamb and floor to lintel — when you open a Kinnear Rolling Door. The entire curtain of all-metal interlocking slats coils compactly above the opening — safe from damage by wind or vehicles. Trucks can pull up to within an inch or two of the curtain, inside or outside, without hampering the door's smooth, easy, vertical operation.

Where doorway traffic is heavy, Kinnear Motor Operators add extra speed and efficiency of door control. Motorized doors may be operated from any number of push-button stations, and any number of doors may be controlled from a single panel.

In addition, Kinnear Steel Rolling Doors offer extra protection against fire, intrusion, wind and weather, and accidental damage. They take more punishment with less signs of wear. Records tell of many in daily use for more than 30 years! Any size, for old or new construction. Write for details.

The KINNEAR Manufacturing Co.

1240-50 Fields Avenue, Columbus 16, Ohio
1742 Yosemite Ave., San Francisco 24, Calif.



Saving Ways in Doorways
KINNEAR
ROLLING DOORS

HOW TO DISTRIBUTE

(Continued from page 29)

under some circumstances and conditions may be a matter of degree. For example, the products of a Range factory at Beaver Dam, Wisconsin, have their maximum place utility when installed in the home of the consumer. They have their minimum place utility when they are stored at the point of manufacture. Their place utility increases at a warehouse close to the point of final consumption because of their availability for more rapid and efficient final delivery. Their place utility increases further when they reach the store of the retailer from which final delivery is made to the consumer. The proximity of a product to the point of final consumption directly determines its place utility.

As to what type of distribution method is best for any given distribution problem, the test should be a comparison of the desired result on the one hand, with the available facilities, services and cost on the other. The desired result will be influenced or controlled by the internal or competitive problems particularly applicable to each shipper. For example,

the desired result may be one or more of the following:

1. The availability of stock at strategic points.
2. Reduced cost.
3. Expedited service.
4. Protection from heat or cold.
5. Storage in transit.
6. Store door delivery.
7. Elimination of handling.

There are many and various transportation and warehousing facilities and methods available. These articles will endeavor to describe these methods and facilities and analyze how their efficient use in the proper combination with other facilities will result in the most efficient or useful distribution

AVAILABLE

Capable warehouse superintendent familiar with many problems facing the warehouse industry. Speaks Spanish fluently.

Box M 433 c/o DISTRIBUTION AGE
100 E. 42nd St., New York 17, N. Y.

HANDLING

(Continued from page 45)

because, as they put it, "We can't afford to buy mechanical equipment." For some strange reason, the term "materials handling" is often thought to be synonymous with huge, high-cost, pieces of equipment. This idea is entirely erroneous, as is readily apparent from a casual examination of catalogs issued by equipment manufacturers. If the giant warehousing concern can afford materials handling equipment so can its smaller competitor, for, like warehouses, materials handling devices come in all sizes, shapes and load-capacities.

Indicative of the myth of bigness is the fact that in many instances capacity of equipment is far greater than loads handled. Bigness as such in materials handling devices is frequently not

desirable. The large device costs more; often it cannot enter freight cars or motor truck trailers or operate where quarters are cramped. The cost of feeding such a giant should be taken into consideration, especially when it does the work which might better be performed by a midget. This same myth of bigness often operates where pallets are used. Instead of employing smaller sizes which may be used to full capacity, many concerns use large unwieldy pallets which are difficult to handle and wasteful of storage space.

The myth of oneness. Many warehousemen think of materials handling in terms of a single type of mechanized equipment. Conceivably, a warehouse can operate with fork trucks alone. The fork truck is a versatile piece of equip-

service particularly applicable or adaptable to individual cases.

The simplest, and probably the most common type of transportation service, is that which provides store-door pick-up and delivery service on smaller shipments between a large number of points. This type of service is provided by rail, by truck and by airplane, although the latter has to date been generally restricted to the movement of small shipments between distant points where time in transit is of the essence.

Generally, on shipments of small or medium size where no special considerations of cost or time in transit exist, rail l.c.l. or truck l.t.l. service is usually the most common method. The principal advantage of rail l.c.l. service is the great number of points where it can be used. The principal advantage of truck l.t.l. service is better service between a limited number of points in a somewhat restricted area. These types of service are usually employed when the requirements of the traffic call for a direct movement from the point of shipment to the point of destination without any intermediate service or handling.

(To be continued)

ment and can do many jobs. Yet, it is apparent that it cannot tow wagon trains as efficiently as a truck-tractor which is specifically designed for such a task. Nor can it equal the hand truck for economical operation in certain areas. The same can be said of any other piece of equipment. The manufacturer who claims that his product can do all materials handling jobs is overlooking the hard facts of industrial life. Reputable concerns, in fact, are extremely careful to avoid such claims.

Sweeping away false materials handling notions, realizing inherent limitations brought on by warehouse construction and by the nature of carriers—these are preliminary measures in the development of sound materials handling in warehousing.



PACKAGING

(Continued from page 46)

actual samples for consideration. In fact, a mimeographed work sheet can be set up on which to enter these size specifications, with the aggregate dimension of multiple packages in a row and a true-scale floor plan of your pallet. A few minutes' time spent roughing in several different load combinations will shorten or even eliminate any trials with dummy packages. This is one of the first things a packaging engineer should do, incidentally, in designing a new size or shape, since this will avoid later conflict with requirements of the materials handling engineer.

Standardization

The last, but not the least of the intangible values are the comparisons that can be made between your specifications and those in related industries. The Division of Simplified Practice in the Department of Commerce has worked in such fields as standard can sizes for vegetables, standard packages for salt, standard sizes for fiber cases, and even some standard sizes for wooden pallets on which these items are handled. If you have not already done so, inquire of the Department of Commerce whether they have lists indicating your items. Naturally, if you have already drawn up specifications on your own items, you will be able to make direct comparisons with industry standards.

Tests

Standardized performance tests are pertinent to the work of standardizing packages. It is easy to visualize packages having uniform size throughout an industry, but the suppliers in different regions may use different materials in making these packages. Thus, standard thicknesses of material cannot be established and performance of the finished package becomes the criterion. Performance, in turn, must be determined by mutually acceptable tests.

HAISS MATERIAL HANDLING EQUIPMENT



Self-propelled Self-feeding
Models 75, 77, 80, 135 Bucket
Loaders for excavating, rehand-
ling, stripping and loading sand,
gravel, stone, topsoil, coal, etc.
Capacity 3 to 8 yds. per minute.

Wheel or
Crawler Mounted



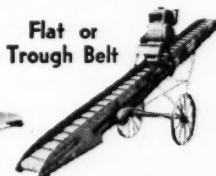
Heavy Duty
or Light
Duty Clam-
shell Buck-
ets for high
speed excav-
ating or re-
handling.

CONVEYORS

For handling all types of aggregates or pack-
ages. All sizes — stationary or portable mount-
ing — lengths and widths to suit requirements.



Car
Unloaders



Flat or
Trough Belt



Drag
Type



Package
Type

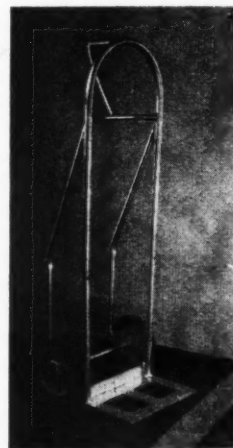
GEORGE HAISS MFG. CO., INC. division of PETTIBONE MULLIKEN CORP.
141st to 144th St. on Park Ave.
NEW YORK 51, N. Y.
Phone Mott Haven 9-3650

4700 W. Division Street
CHICAGO 51, ILL.
Phone Spaulding 2-9300

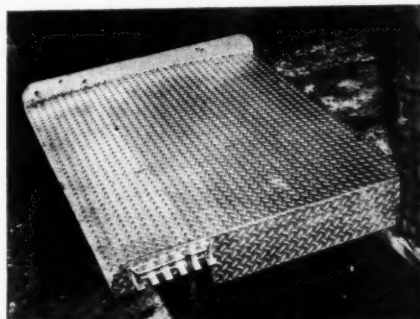


MAGNESIUM HAND TRUCKS--TOO!

Constructed of HUSKY - LIGHTWEIGHT - ALL WELDED MAGNESIUM TUB-
ING — Specially designed for BEVERAGE INDUSTRIES and GROCERY
WAREHOUSES.



Write for HAND TRUCK
Literature DA-1



The ONLY MAGNESIUM RAMP with
the SAFETY LOCKING DEVICE

NOW constructed in: 3,000 lbs.—6,000 lbs.
—8,000 lbs.—and 10,000 lbs. Capacities.

Write for MAG. RAMP Bulletin #480-DA

PENCO

ENGINEERING CO.

725 - 2nd Street, San Francisco, California

IT'S UP TO THE USER

(Continued from page 51)

job without at the same time crushing the corrugations.

As a result, important developments have recently taken place in providing rubber plates of optimum durometer characteristics, inks that will give full coverage with a "kiss impression" and feed rolls and other printing press parts that will function accurately at high speed without distortion of the corrugations. In many cases, shippers have consented to a revision of their printing copy to eliminate the large areas of solid color and the use of horizontal border lines which often form a starting point for failure in the compression tester.

Narrow flap scores are replacing the wider ones in order that the compression load can be transmitted to the side walls with an absolute minimum of deflection. Deflection is not just a laboratory term — it relates directly to crushing of the contents. The box maker

is also improving the technique of corrugating in such a way as to avoid skips in the adhesion due to finger lines. These breaks also form starting points for compression failures.

Packaged merchandise in a super-market must be in perfect condition at the point of sale, and probably nothing is more conducive to damaged cartons than crushing of the shipping container. Many large shippers have developed formulas for their compression test requirements on the corrugated boxes they purchase, and at Atlantic City, Mr. Balkema of Colgate-Palmolive-Peet passed out a set of charts showing what top and end compression figures should be expected from good boxes made of A, B and C Flute and 125, 175, 200 and 275 test board.

There has been some publicity on a disposable pallet made of corrugated sheets separated by fibre posts. These posts are simply lengths of wound tubing sawed into 4 inch sections and are, therefore, necessarily thin walled and small in diameter. An improvement is the Addison-Semmes pallet where the posts are made of wound and glued single face corrugated with thick walls and large diameter. Ordinarily 9 posts are used on a standard 48 x 40 pallet. A variation is to use a corrugated tray as the top sheet, then after a 4 ft. deep tube 48 x 40 is set in this tray and fitted with partitions, pads or more trays. The unit becomes what is known as a "Power Pack" and can be used to deliver large quantities of merchandise as a unit load. The top of the deep tube is usually covered with another inverted slotted tray and the whole unit bound to the pallet with metal straps.

This not only effects considerable savings in handling and freight, but also is an enormous convenience on assembly lines: one of these unit loads is easily opened and can keep the assembly line busy for a considerable time. This compares with the present method of receiving a few units in an ordinary size corrugated box, with the result that

another individual box has to be broken open every few minutes.

End Opening Case

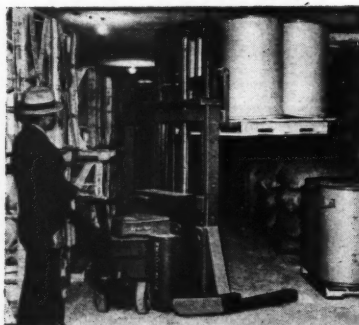
During the war when corrugated was in limited supply, the WPB urged shippers to open their cases wherever possible on the small end in order to reduce flap area and save square footage. This resulted in some significant changes in packaging methods including reversal of the corrugation direction to give stacking strength and the development of sealing presses that would seal flaps while the box was in a horizontal position. In many cases these economies have proved to be so practical that they not only have persisted to the present day, but alert shippers are studying their packages to see if advantage can be taken of this economical shape. This is especially true in the soap industry.

Geisler Rubber Cleated Container

The advantages of wood cleated boxes with fibreboard panels are well known, but the general use of these containers has been retarded by the fact that the shipper has to assemble the shooks and because the average fibre box maker is not sufficiently familiar with wood procedure to take on cleated production. These objections appear to have been solved by the patent applied for container recently invented by William Geisler. He uses shaped cleats made of rubber or plastic which can be stitched to a blank by the box maker and the blank is then shipped flat to the user who merely folds it in a rectangular shape and closes it with one row of stitches. The rubber cleats are very cheap as they are made of scrap rubber, and the box offers a surprising amount of rigidity even when exposed to damp atmospheres or packed with damp contents. In the latter case, the fibreboard can be made of VUS stock. Such a container should be a "natural" for export as well as for commodities going into cold storage, such as apples and other perishables. It is also excellently adapted to the shipment of bottled beer and other beverages.

(Continued on page 64)

STACK IN SIX FOOT AISLES



with the NEW
GO-GETTER

**Telescopic Straddle Type
Walk-Along Battery Lifttruck**

Pile it HIGH at LOW cost with push button ease! Pile it faster; pile it safely—the GO-GETTER way. It's so easy with all controls at end of handle. Utilize that valuable space near the ceiling in warehouse, stockroom or loft.

EASY DOES IT!

Save more floor space, also with this latest GO-GETTER which handles 48" x 48" pallets from narrow six-foot aisles, a tremendous advantage. And the GO-GETTER is easy on the cheek book, too. Seven types cover all requirements.

Send us details of your needs and let us quote you. Made by manufacturers of the famous REVOLVATOR PORTABLE ELEVATORS and RED GIANT HAND LIFTRUCKS.

Established 1904

REVOLVATOR Co.

DESIGNERS AND MANUFACTURERS OF MATERIAL HANDLING EQUIPMENT

8796 Tonnele Ave., North Bergen, N. J.

RAPID-FIRE

(Continued from page 17)

More frequently, it is a long-range relationship where it is not so much a matter of speed in deliveries, but a matter of the manufacturer, supplier or other shipper comprehending the merchandising necessities at the other end and preparing goods to meet the marketing challenge. Packaging must invite attention, protect after examination, and permit the dealer to deliver or dropship without danger of deterioration. Packing must permit easy identification in transit and in warehouses. Warehouse stocks must flow readily to selling outlets, not after the stocks are exhausted and sales are lost forever, but to maintain constant, adequate inventories.

Examples in industry today of this relationship between merchandising and distribution are endless. Recently, the writer was called by a manufacturer of a line of electrical goods. For more than 60 years the company was a leader in the field and well-regarded by wholesale distributors and electrical contractors. Recently, it awakened to the fact that as merchants they were somewhat antiquated. The buying public did not know the goods; and while its unpackaged items were found on many hardware and department store counters, the customer had only the assurance of the store that the goods were of high quality and backed by a manufacturer of repute.

Today, about 25 percent of its sales are tastefully packaged, well-displayed items reflecting the high standards of the maker. Other items are being studied for rapid conversion from the bulk-packed shelf box to individual packages designed not only to identify and bring attention to the goods, but to safeguard them until they are used.

A more pernicious distribution problem was facing this manufacturer, however. From the years during which its fragile mechanical parts were packed bulk in light paperboard boxes, its branches, distributors, cargo carriers and even its own shipping department had got into the habit of heavily over-

packing every outgoing shipment. This sufficed when goods moved principally untouched until reaching the electrical contractor. But merchandising had brought the line into retail outlets of all kinds.

More and more goods had to be jobbed or distributed by distant warehouses. Because of heavy overpacking by the plant itself, there arose, all the way down through the distribution channels, the conviction that goods from this manufacturer had to be overpacked. Obviously this was a retarding influence, and sales were lost to competitors. It worked this way—carriers and warehousemen who broke down shipments replaced the items in smaller, more substantial cases. Wholesale and branch-office distribution was similarly effected. Shipments to retail outlets had to be well-protected by overpacking, it was felt. The stores receiving goods in such manner went to the expense of heavily wrapping outgoing deliveries. This was true despite the fact that many of the items were nested in individual packages which could withstand a shipment across the country and back without damage to contents.

During this transitory period (before all goods are stocked in containers especially designed to protect, to display and to stand up in shipment without further protection), a simple code arrangement was worked out which is proving quite satisfactory. Stock containers marked "A" have been tested through all sorts of shipments and require no over-protection whatever unless a kraft paper overwrap is thought advisable for reasons of appearance. But "A" cargo can be loaded on truck or in rail car, or expressed, mailed or taken away by the customer as is, without fear of damage to contents.

Another category of the line received a "B" classification. These were the items which in local distribution or from the dealer to customer were in satisfactory containers. However, for distant shipments, where the merchandise may be subjected to rough handling,

(Continued on page 94)



NO
= **Down Time**



Plant Superintendent looks at MONARCH SOLID TIRES

No down time for tire maintenance—right! But that's only part of the story. Monarch Solid Tires have an extra long service life, so they lower materials handling costs that way, too. They're tough, stable, sure-footed, and they can't puncture—Monarch-equipped vehicles go anywhere in the plant.

Monarch specialization pays off for you in better industrial tires, including such types as Monarch Easy-Roll, Cushion, Static Conductor, and Neoprene Tires.

Write for specific information on the use of Monarch Solid Tires in your plant. **THE MONARCH RUBBER CO., 500 Lincoln Park, HARTVILLE, OHIO.**

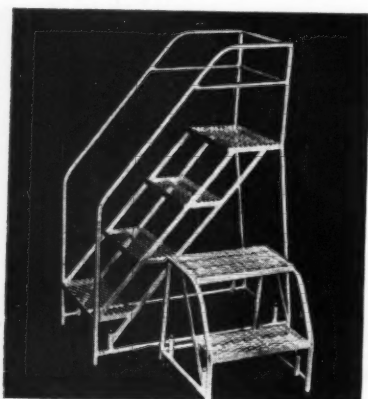
Specify Monarch Solid Tires on your industrial vehicles. Replacement tires available from the manufacturer of your equipment.



MONARCH

Specialists in Industrial Solid Tires
and Molded Mechanical Rubber Goods

New Products and Procedures

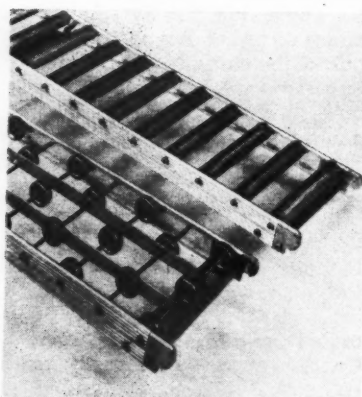


(Right) The KX Charg-O-Matic, manufactured by The Hertner Electric Co., is a fully automatic, motor-generator-type, single-circuit battery charger for electric industrial trucks. Designed for easy installation and operation, the unit requires no base, bench or stand. Charger is said to be operated merely by inserting charging plug in battery receptacle and turning one switch. Controls are approximately at desk height for easy reading and operation. Automatic charge control is said to assure positive shut-down when battery is fully charged. An electrically driven selective time-clock switch provides automatic cut-off at the end of charging period. If necessary, time-clock switch can be turned back to zero. It can, it is stated, charge one lead-acid battery in eight hours or less and one nickel-alkaline battery in seven hours or less.



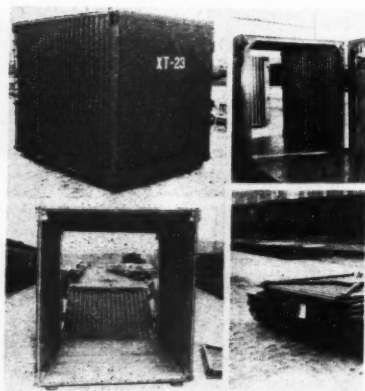
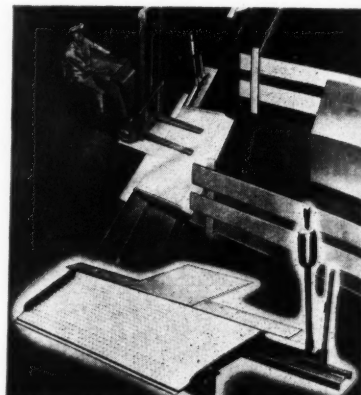
(Left) A new mobile step ladder incorporating an automatic safety feature is being produced by The Ballymore Co., Philadelphia. The ladder is mounted on ball bearing casters for easy movement, but rolling is prevented by rubber-tipped legs which come in contact with the floor as soon as the ladder is mounted. Unit comes in standard sizes from one to six steps. Frame is of 3/4-in. steel tubing.

(Right) The Clarkette-5, developed by Clark Equipment Co., Battle Creek, Mich., for use in merchandise warehouses and in other areas where operations involve selection and pick-up, is a three-wheeled vehicle with a 500-lb. drawbar pull. Used to draw a train of from one to four trailers at a speed of from one to 4.9 mph., the unit is said to be of particular value where aisles are narrow.



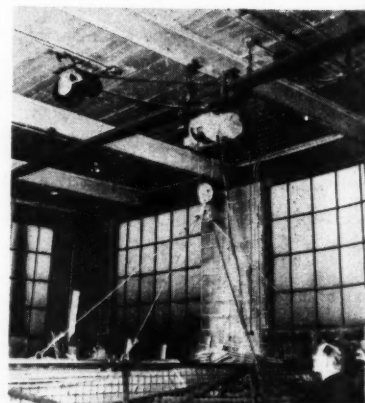
(Left) A new line of lightweight conveyers is offered by Arrow Products, Inc., Grand Rapids, Mich. Structural members are constructed of heat-treated, extruded aluminum alloy; rollers are of impact-resisting, drawn aluminum tubing, 1 1/2 in. in diameter. The rollers are mounted on heavy-duty ball bearings and are available on either 3 1/2- or 7-in. centers. Models available in 12- and 18-in. widths.

(Right) Associated Handling Equipment Co., Grand Rapids, Mich., announces its new, adjustable Rite-Hite Loading Dock, a unit which provides for both vertical and lateral adjustments, yet which is stated to eliminate service and maintenance problems. Twelve-inch lateral movement centers the dock to the carrier. Unit is 9 ft. 9 1/2 in. wide; 5 ft. 1 3/4 in. in depth. Made of 1/4-in. steel plate.



(Left) A tamper-proof, collapsible shipping container designed to thwart pilferage and effect economies by reducing loss of goods in transit has been developed for commercial use (to order) by Edo Corp., College Point, N. Y. "Transporter" has capacity of 280 cu. ft., is designed to carry 5,600 lbs., and weighs 750 lbs. empty. Unit is 25 in. high when knocked down and stacked flat.

(Right) Four-part bridle-sling provides solution to the problem of hoisting such loads as sheet-steel, machinery, ship-to-shore cargoes, construction equipment and large rectangular-shaped loads like the basket-type conveyance illustrated. Ends of sling cables are permanently secured to the frame. Hoist is a 1/4-ton wire-rope trolley-mounted unit made by The Yale & Towne Mfg. Co., Philadelphia.



DISTRIBUTION ACTIVITIES

(Continued from page 37)

around the walls. Pine panelling completes the background for anyone anxious to meet easy informality.

Mr. Conklin, however, is not satisfied; he is in search of a cigar-store Indian. Anyone possessing same and willing to part with it, please contact above party at above locale.

Formation of a new warehouse company in Wilkes-Barre, Pa., known as the Eastern Pennsylvania Storage Co., has been announced. It is a partnership of *Walter S. Robbins*, Scranton, and *Harry L. Rothstein*, Wilkes-Barre. The new company has over 900,000 cu. ft. of space with facilities for cold and dry storage and for pool car distribution.

American Chain of Warehouses, *John W. Terreforte*, secretary announces the reinstatement of *Lehigh Warehouse and Transportation Co.* as Metropolitan New York member of the Chain.

Mayflower Warehousemen's Assn. has chosen *Stewart Davis Smith* as executive secretary. Mr. Smith has a varied background in sales promotion and public-relations work.

Robert F. Odell is now sales manager of National Moving & Warehouse Corp.-Wilson Storage Co., both of New York City. Mr. Odell is a contributor to *Distribution Age*.

New York State Assn. of Refrigerated Warehouses elected the following officers: president, *Garth A. Shoemaker*, Elmira; first vice president, *Weston M. Rider*, Germantown; second vice president, *Frank H. Field*, Jamestown; secretary, *Charles G. Ashe*, East Aurora, treasurer; *Ralph C. Stockell*, New York. *J. R. Shoemaker*, Elmira, was elected chairman of the Legislative Committee.

New members of the New York State Warehousemen's Assn. include "original" *J. F. Blackham Inc.* (and Queens County Storage Co., Inc.), Flushing; *Great Neck Storage Co., Inc.*, Great Neck; and *Fumol Corp.*, Long Island City.

Mrs. E. M. Busey has finally come across with details about her new warehouse in North Kansas City. It seems the Radial Warehouse Co. is moving from a multiple story building to a one-story building. Mrs. Busey expects to cut costs at least 50 percent. We quote from her letter: "We, of course, will have modern loading platforms . . . dock space for loading 10 cars . . . loading and unloading (facilities for) over-the-road trucks. The building will be modern in every way . . . (with) overhead doors . . . (and) will be completed by August first or shortly thereafter."

Mrs. Busey, we understand, is the only woman in Missouri owning and operating a warehouse the size of Radial Warehouse Co. Mrs. Busey is also secretary of the Missouri Warehousemen's Assn.

Frank E. Laughton, who will become the operating chief of Richmond Cold Storage Co., Richmond, has been vice

president of *Miller and Rhoads Co.* department store.

Union Storage Co., Pittsburgh, is to be dissolved about October 31. Two freezer plants in the downtown section have been sold to the state. However, the company continues to take storage at its buildings in Water St. for periods up to 90 days. (*Vitkauskas*)

The Wisconsin Warehousemen's Assn., in its annual meeting held at the Milwaukee Athletic Club, July 28, elected *Ray J. Laubenstein*, Leicht's, Green Bay, as its new president to succeed *T. L. Hansen*, association president for the past two years. Others elected and their respective positions were *Harry Pratt*, National Terminals Corp., Milwaukee, secretary; *E. F. Homuth*, Anchor Transfer & Storage Co., Fond du Lac, treasurer; *H. M. Willensen*, American Warehouse Co., Milwaukee, vice president merchandise division; *Henry Melius*, Boulevard Fireproof Warehouse, Milwaukee, vice president household goods division; *Howard Fabian*, Central Storage & Whse. Co., Madison, vice president cold storage division; and *T. L. Hansen*, Hansen Storage Co., Milwaukee, *E. H. Ottman*, National Warehouse Corp., Milwaukee, *Philip G. Kuehn*, Wisconsin Cold Storage Co., Milwaukee. *A. J. Schneider*, Schneider Transport & Storage Co., Green Bay, and *Norman R. Anderson*, Manhardt Storage Co., Milwaukee, additional directors.

Miscellaneous

R. K. Hampton has been appointed manager of the New York office of *Beaumont Birch Co.*, Philadelphia. This company manufactures bulk materials handling equipment.

Bringing the mountain to Mahomet is about what *Ford Motor Co.* did recently. Experimental cars have in the past been tested on San Francisco's Filbert St. grade; Ford moved 116,000 tons of slag from River Rouge steel mills to a Dearborn site and paved the 30-deg. hill to match the San Francisco grade.

COMPTROLLER

Internal Auditor

By Southern New England Class I carrier with extensive furniture-merchandise warehouse and distribution facilities. Position demands man with broad knowledge in general office management and accounting. Must be able to handle a good sized staff and assume many responsibilities now handled by top executives. Should be able to effect economies and get results. This is naturally a permanent position with a future. Established firm, outstanding leader in its field. Pays a good salary with prospects for even more if the man fits the job. Please state age, references and your experience fully.

Box J 100 c/o DISTRIBUTION AGE
100 East 42nd St., New York 17, N. Y.

The Material Handling Institute, Inc., announces the results of a vote taken by that organization on whether the next Materials Handling Exposition should be held in Chicago in June, 1950, or in Philadelphia in 1951. Approximately, 62 per cent of the membership voted for Chicago in 1950. As against the 47 votes of the MHI membership in favor of the 1950 show, only eight voted for 1951, five opposed both suggestions and 16 did not vote. As a result, the MHI endorses the Chicago exposition and will proceed with *Clapp & Poliak*, exposition management, on arrangements.

The membership committee of the MHI has approved an application for membership received from *The Traffic Service Corp.*, publisher of *Traffic World* and *World Ports*. *Transportation Supply News* is an affiliate of the company.

Several projects are being carried through by National Safe Transit Committee, sponsored by the Porcelain Enamel Institute. These include pre-shipment testing, an organized program involving carriers who are attempting to improve shipping and handling, car marking, car loading, and a label which will be supplied to manufacturers who take part in the over-all program and are certified by the National Safe Transit Committee. To be certified means that the producer has pre-shipment testing equipment in plant and that he pre-tests according to approved standards or utilizes approved testing laboratories.

"STATE OFFICIAL REJECTS \$200 MONTHLY RAISE." *Moss Patterson*, president of Mid-continent Trailways and vice-chairman of the Oklahoma state board of affairs, who has long been an advocate of governmental economy, said: "I won't accept the raise in salary (made possible by legislative action) . . . I've advocated economy in government and saving the taxpayers' money. I don't care about the raise, which may be legal all right. I will continue to draw the same salary." Some image in bronze (not in gold) should be raised in his honor. (Risen)

An electronic scale has been developed by an aircraft instrument company (name unavailable) working with the U. S. Dep't of Agriculture which weighs livestock. This scale, it is stated, permits greater accuracy and speed and eliminates "nearly all possibility of error or incorrect weights." This higher-cost scale is important in livestock weighing because of reputed faking of weights. If redesigned, it might be useful in various distribution fields.

U. S. Department of Commerce, National Bureau of Standards, offers a list of commercial standards, as revised to July 1, 1949. Alphabetical and classified lists deal with innumerable items, including transportation items insecticides, etc. Mimeographed copies of specific standards are available without charge.

John C. Richardson is now manager of industrial tire sales for U. S. Tires division of United States Rubber Co. Mr. Richardson has many years of varied experience with the company, ranging from instruction to service merchandising.

PACKAGED LUMBER

Steel strapping of prefabricated lumber is one answer to excessive distribution costs in the lumber industry.



Loading strapped lumber on rail car.

SHIPMENT of prefabricated goods has the great merit of cutting down waste material transported and therefore reduces costs which go with shipment of waste. This is very important in the lumber field, where waste bulks large. Furthermore, having shipped lumber in such form that it is immediately usable in the same form as shipped is another basis for cost savings, so far as fabrication at site is concerned. Savings here outweigh added fabrication costs at the source.

Standardization of pieces and fabricated items is, clearly, essen-

This article is largely based on the experience of Sterling Lumber & Supply Co., Chicago.

tial to successful reduction in transportation costs. Efficiency is increased through having all processing at source rather than at innumerable distribution points; storage cost is cut and insurance costs are also reduced.

Waste

The objective is to obtain as close to 100-percent utilization of lumber as possible. Where this is left to the buyer, much wastage results. For example, there is lumber used for car dunnage and loading. Many users buy random lengths when actually 10-ft. stock is the closest standard length for use without waste. Here a substantial further

saving may be made by buying lumber mill-trimmed to 9 ft. 2 in. or 8 ft. 6 in.

The supplier, on his part, can take advantage of this potential demand by planning months ahead and sorting green lumber with this object in mind.

Cost

In order that the savings in waste would counter-balance any added cost either in transportation (due to higher applicable rates) or elsewhere, it is essential that engineering by skilled lumber men be employed, to extract every bit of cost savings possible prior to shipment. One step is to locate a lumber mill close to source of raw materials, getting the benefits as long as supplies last. Another is to test lumber to find the cheapest type consonant with final use.

To illustrate lowering of use costs, consider wood blocking for heavy machinery. Many companies use blocks made of more expensive lumber than is necessary. They should use second growth gum instead of, say, white pine.

Additional savings can be made by cutting, nailing and other work by a trained fabrication crew. Too often the user buys in small quantities and has high costs per dollar of raw materials cost. Pre-boring for heavy nails also allows savings; this operation may result in as much as a 50-percent labor-charge reduction for securing blocks to floors. In addition, pre-boring provides for nails being driven straight into the

(Continued on page 61)



Steel-strapped lumber, loaded on freight cars, ready for distribution from mill.

Getting down to Cases

By LEO T. PARKER
Legal Consultant

MARKETING

Things You Can Do

YOU CAN claim a valid chattel mortgage filed in the county and state where the merchandise is located at the time the contract and mortgage was executed. Otherwise your mortgage is void. For example, in *Morris Plan v. Jenkins*, 216 S. W. (2d) 160, Missouri, it was disclosed that a seller in Oklahoma sold merchandise and took a chattel mortgage to secure the balance due on the purchase price. The chattel mortgage was filed for record in Oklahoma County, Oklahoma, May 10. On this date, the merchandise was actually in Hot Springs, Arkansas.

Later the purchaser defaulted in paying the notes when due and the seller sued to foreclose the mortgage and get possession of the merchandise. The higher court refused to permit the seller to repossess the merchandise, and in holding the mortgage void, said that a valid mortgage must be on merchandise located where the mortgage was filed.

YOU CAN avoid liability for injuries caused by your truck driver, while delivering merchandise, if the testimony shows that your truck driver was not negligent. In *Bradley v. Thomas M. Madden*, 76 N. E. (2d) 767, Ill., it was shown that a motor truck skidded, on an icy highway, over the center line, and struck another automobile. The court held that since the owner of the damaged automobile failed to prove that the truck driver was guilty of negligence in causing his truck to skid, damage was not recoverable.

YOU CAN make a valid contract without signing the contract or confirmation if the testimony shows that you intended to make a valid and binding contract. In *Stephenson v. Oat*, 213 S. W. (2d) 855, Texas, it was shown that a buyer and seller made a verbal agreement whereby the seller agreed to sell and the buyer agreed to purchase a stipulated quantity of merchandise. Later the seller sent the buyer a written confirmation, but the seller did not sign it.

In subsequent litigation, the higher court held that a valid contract was made although the seller did not sign the confirmation. In other words, the higher court decided that by sending a confirmation, although unsigned, the seller intended to make a valid contract. The court said: "The written confirmation is not rendered ineffec-

tive by reason of the fact that defendant (seller) did not sign it."

YOU CAN hold the other contracting party liable on an agreement to arbitrate all controversies. In *H. S. Cramer & Company v. Washburn-Wilson Seed Co.*, 195 Pac. (2d) 346, Idaho, the testimony showed that a buyer and seller entered into an agreement in writing to submit all disputed matters to an arbitration committee. Subsequently, a dispute arose over the amount of money owed the seller by the purchaser. The arbitration committee decided the dispute in favor of the seller and held that the purchaser must pay the seller \$1,580. The purchaser was dissatisfied with the verdict and appealed to the court. The higher court held the arbitration agreement and award by the commission valid and effective.



YOU CAN avoid liability on a suit not filed within the period specified by the "Statutes of Limitations."

In *Patterson v. Vincent Drug Corp.*, 61 Atl. (2d) 416, Del., it was shown that a state law was passed which provides that a suit for the recovery of damages for an injury must be brought within one year from the date of the alleged injuries. One Patterson sued a manufacturer for heavy damages because of illness alleged to have been caused by consumed food products. The higher court held Patterson not entitled to a favorable verdict because the suit was filed more than one year after he purchased and used the product.

YOU CAN compel an innocent purchaser to forfeit the price he paid for merchandise not legally owned by the seller. According to a recent higher court, one who gives a "bad" check for purchased merchandise is not a legal owner of such merchandise.

For instance, in *Gregory v. Laird*, 212 S. W. (2d) 193, Texas, it was shown that a seller sued one Gregory for possession of an automobile which was in the possession of Gregory. During the trial, the testimony proved these facts: Gregory innocently and in good faith purchased the automom-

bile from one White who had possession of the automobile. The testimony showed that White purchased the automobile and gave the seller a check on a bank as payment. The check was returned "unpaid." Gregory was "out" the money he paid for the car.

YOU CAN sue and recover payment for merchandise based on the amount which your books show the purchaser owes. For example, in *Oakland California Towel Co., Inc. v. Zanes*, 184 Pac. (2d) 21, Calif., it was shown that the Oakland California Company kept accurate books showing the value of merchandise purchased by a purchaser and the amount of merchandise returned for credit. The higher court ordered the purchaser to pay the amount shown on the seller's books, as being due.

YOU CAN credit any account of a purchaser who makes payments, if he fails to specify which account he wants credited. For illustration, in *Gilpin v. Swainsboro Co., Inc.*, 44 S. W. (2d) 168, Ga., a purchaser was sued by a seller on an account for \$261.35. The purchaser contended that he should not be held liable because he had given a check cashed by the seller in settlement of the bill. However, the testimony presented by the seller proved that the purchaser had two accounts, and he did not designate which account should be credited. The seller's bookkeeper credited the check to the purchaser's personal account, instead of the account for merchandise. The higher court ordered the purchaser to pay \$261.35 plus additional costs to the seller, stating that when a purchaser has two accounts with any seller, his failure to designate to which account a payment shall be credited entitles the seller to credit either account.

Things You Can't Do

YOU CAN'T recover on a void insurance policy, although the company's agent promised adequate protection. For example, in *Smith Mut. Fire Insurance Co.*, 33 N. W. (2d) 206, Wisc., it was shown that an insurance policy contained a clause to the effect that the policy would be void if assigned without consent of the insurance company. Later, the insurance company's agent advised the insured to assign the policy. This was done.

The higher court refused to hold the insurance company liable for the subsequent loss, saying that an insurance company is not liable for acts or

promises of its agents which violate the terms of the insurance policy. This court explained that one who holds an insurance policy must read it and know what it contains and *cannot rely upon promises* made by the insurance company's agent.

YOU CAN'T replevin merchandise or equipment paid for by a purchaser's personal check on a bank which refused payment, if you fail to reserve a lien on the merchandise. For example, in *Dresher v. Roy Wilmeth Co., Inc.*, 82 N. E. (2d) 260, Ind., it was disclosed that a seller transferred the title of a machine to a buyer who gave his personal check as payment. The seller did *not* reserve a lien on the machine until the check was paid. Before the purchaser's check was returned by the bank unpaid to the seller, the buyer sold the machine to an innocent purchaser.

In later litigation the higher court held that the original seller could *not* maintain a replevin suit against the innocent buyer, who took a good and legal title from the seller. The court said that where a seller accepts a personal check as payment for merchandise, the seller should protect himself by reserving title or a lien on the merchandise until the check is paid. This court also explained that a bank check is merely a "piece of paper" which cannot pay for merchandise until it is honored.

YOU CAN'T recover "liquidated" damages for breach of an ordinary sale contract unless you prove that the amount of the specified liquidated damages is equal to the actual damages you sustained. For example, in *Olson v. Biola Co-Op. Raisin Growers Assn.*, 193 Pac. (2d) 929, Calif., the higher court held that a contract between an ordinary buyer and seller of raisins is *void* which contained a clause in which the seller agreed to pay the purchaser a *certain* amount as liquidated damages in event the quantity delivered by the seller was below that specified in the contract. The higher court held that as between ordinary buyers and sellers the clause could be rendered valid *only* if the testimony proved that the purchaser suffered the *amount of damages* specified as liquidated damages in the contract.

On the other hand, the higher court held that such a clause is *valid* when the contract is made with a *non-profit* cooperating marketing association. This court said:

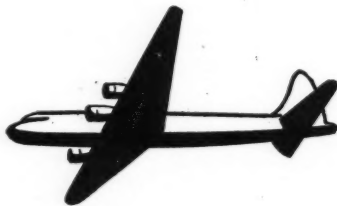
"The general rule is that a contract which undertakes to fix the amount of damages in anticipation of a breach of an obligation is void . . . However, an important *exception* to the general rule on the remedy of liquidated damages prevails in the case of non-profit cooperative marketing association. This exception permits such an association and its members to stipulate in advance the amount of damages to be paid upon the breach of an obligation in the particulars of 'the sale or delivery or withholding of products' forming the object of their agreement."

YOU CAN'T collect payment for merchandise sold to a business firm previously sold to a new owner. In *Premier Co. v. Bornstein & Son, Inc.*, 61 Atl. (2d) 632, D. C., the testi-

mony showed that one White sold his business known as Premier Company. Soon afterward the new owner phoned a dealer and stated that the Premier Company "wanted" certain refrigerator equipment installed at once. Without inquiry the dealer installed the equipment.

In subsequent litigation, the higher court held that the dealer could not recover from White (the seller of the business) although he had neglected to erase his name from the building in which the business was conducted. This court also explained that although the name Premier Company was painted on the side of the building, it was the dealer's duty to *know* whether White still owned and operated the business, before installing equipment in the building.

YOU CAN'T repossess merchandise for failure of the purchaser to pay the agreed purchase price, unless the testimony shows that you *retained* legal title to the merchandise. For example, in *Runnels v. Fairchild*, 37 So. (2d) 312, Miss., it was shown that a seller sold a motor on credit to a purchaser under a *verbal* contract.



The purchaser failed to pay for the motor and the seller filed suit to repossess it. The higher court refused to hold in favor of the seller, saying that he had failed to prove that he retained title to the motor to secure the purchase price.

For comparison, see *Kerl v. Smith*, 51 So. 3 and *Superior, Inc. v. American Co.*, 155 So. 186. Here, the purchaser signed a conditional sales contract which stated that the seller retained the right of possession of the merchandise as security for the purchase money. This court held that the seller *could* repossess the merchandise if the purchaser breached any clause in the contract, as a failure to make agreed monthly payments.

YOU CAN'T enforce a sales contract which violates a valid law. In *Houston v. Ball*, 214 S. W. (2d) 723, Mo., the higher court held invalid a contract for the sale of all liquor "stored on premises" because the purchaser did not have a license from the state to sell liquor. The higher court held that all contracts are invalid and unenforceable which have an "illegal" object.

YOU CAN'T invalidate a license law which is for protection of the public health, safety, and welfare of citizens. In *State v. George*, 215 S. W. (2d) 170, Texas, a state law was passed which stipulated that all business firms in towns having more than 5000 population must pay a license fee to obtain a license, but firms in towns of less than 5000 inhabitants need not pay the license fee. The higher court held the law valid.

YOU CAN'T refuse to pay two license taxes, one for a permit and the other for a privilege. In *Rice Drug Co. v. City of Pittsburgh*, 61 Atl. (2d) 878, Penna., it was shown that a company paid a license for a State "permit" to do business. The company paid another tax to a city for the "privilege" of doing business. The higher court held *both* the state and city tax laws valid. The court said:

"There is no merit in appellant's (Rice Drug Company's) contention that the payment of a fee to secure a permit . . . is a payment for the privilege . . ."

YOU CAN'T ordinarily collect from a purchaser on a *verbal* contract for sale of \$500 of merchandise. But if the purchaser keeps the merchandise in his possession, you can sue and collect the amount due. For example, in *Munzemaier v. Quick*, 58 Atl. (2d) 378, Conn., it was shown that a seller sold to a purchaser merchandise worth \$500. The purchaser refused to pay the purchase price and attempted to avoid responsibility and liability by proving that the contract was void because he purchased the merchandise under a *verbal* agreement.

However, since the seller proved that the merchandise was still in possession of the buyer, the higher court ordered the buyer to pay the amount due.

This suit was based on the Statute of Frauds, *applicable in all states*, that a verbal contract is *void* by which a purchaser agrees to "purchase" \$500 or more worth of merchandise. A verbal contract for purchase of less than \$500 worth of merchandise always is valid and enforceable.

YOU CAN'T expect a verbal lease for more than *one* year to be valid. All leases over one year must be in writing. In *Jennings v. Petrol Corp.*, 195 Pac. (2d) 899, California, the testimony showed that one Jennings took a five-year verbal lease on a building. The higher court held the lease void and not enforceable by the lessee.

YOU CAN'T expect the government to pay you more than the market value of appropriated property. In *Cors. v. United States*, 75 Fed. Supp. 235, the testimony showed that a vessel built in 1895 was operated until about 1942, when it was sold to the highest bidder for \$2,875. The purchaser spent \$5,699.78 on repairing it. After the vessel had been reconditioned, the government offered to pay the purchaser \$10,500 for the boat. The government admitted that the boat could have been sold on the market for \$15,000, but acknowledged liability for only \$10,500, because \$5,000 of the market value of the vessel was due to an enhancement in market value brought about by the government's need for vessels. Nevertheless the Federal Court awarded the owner \$15,500.

This decision reverses previous decisions to the effect that the government, state, county or city need not pay for appropriated private property more than its value *before* its value "was increased" due to public improvements.

PACKAGED LUMBER

(Continued from page 58)

freight car floor and at the proper angle for maximum grip. This combination expenditure adds up rapidly. Efforts to reduce handling and packaging expenses are aided by the pre-boring.

Loading and Handling

Increased efficiency has become the only answer in the effort to lower expenses during the period of advancing labor rates. One important step toward higher efficiency is to load lumber properly with the use of modern materials handling equipment. For lumber use in transportation and other distribution fields, steel-strapped packages in open railroad cars, to be unloaded in unit lots by power equipment, is an effective answer to the problem. Both flat and round steel-strapping are effective.

In this connection, K. M. Kennell, president of the Pacific Northwest Trade Assn., stated in a speech delivered at a recent meeting of the Pacific Northwest Advisory Board: "Lumber has been, in a mild sort of way, moving in strapped packages. The results have been in many cases to cut the cost of handling it and increase the speed of handling. It has cut the cost in half and increased the speed of handling it by double, sometimes more than that."

There are approximately 8,000 pieces of 1 x 4 lumber in a carload. About 48 man-hours are required for manual handling. By using steel-strapped lumber packages, unloading can be accomplished in about four hours, using power equipment. More important, the unit packages can offer this same saving for every subsequent handling. It is certainly no exaggeration to say that a fork or straddle truck can handle a whole lumber package almost as easily as a man can move a single piece.

Lumber, packaged at the source, may remain packaged until it is used. This promotes efficiency since the packages may be stored in tiers. Package units of lumber result in cleaner plant, bringing down—or tending to bring down—insurance



Photo courtesy of Gerrard Steel Strapping Co., Chicago.

Round steel strapping used on bundled lumber leaving yard for construction site.

costs. Chances for pilferage are reduced under such conditions and inventory-taking is facilitated. Once the packages are counted, they need not be counted again until the metal bands are removed.

Freight Savings

High freight rates constantly require careful study. To illustrate high costs, charges are almost \$30 for transporting 50 pieces of 12 ft. 2 x 10's from the Douglas Fir region to Chicago. Rate changes are cumbersome matters, but shipping weights can easily be cut to lowest possible amounts. By removing excess lumber at the source, shipping costs are significantly reduced. It is estimated that up to \$1,000 per rail car can thus be saved. While the above extreme example is not typical, savings may well be substantial.

The potential customer might ask how such savings can apply to his particular operation. The answer lies in the spread between the cost of raw lumber and final-use cost. Waste, freight, cutting, boring, assembly, taxes, handling, overhead, all must be added to raw-lumber cost. Apparent as well as hidden costs must be considered.

The raw lumber cost should be recognized as only a starting point. Many things happen to the iron ore of Mesabi before it emerges from the assembly plant as an automobile

or a refrigerator. A complete and clear picture would show distribution costs piling up at every point, whether at raw material source, at parts plants, at main plant, at assembly plants and everywhere between those points. It is cutting those costs that makes for efficiency and speed and lower costs and all the other advantages mentioned.

(The Sterling Lumber & Supply Co. informs us that experience has shown no appreciable stretching of steel strapping such as to cause slipping or shifting. This company's experience, over some years, indicates that the strapping will not stretch if properly used. If there is proper bracing, there will be no slipping or shifting. Sterling worked hand in hand with steel-strapping engineers for years before it made any volume shipments of packaged lumber.)

Another factor contributing to the success of the packaging venture is the use of modern materials handling equipment. The company uses the boom attachment with the Hyster fork truck in the loading of both flat cars and gondolas. "Under proper conditions," the company says, "flat cars can be unloaded with only the Hyster fork truck. This is possible when the truck can reach both sides of the flat car. Since the track going into the yard in Chicago is accessible from only one side, we are forced to use both boom attachment and fork truck.")

CARRIER LIABILITY

(Continued from page 48)

but after which he went about some other business.

"The 900 cases were put aboard; the 100 were not. Some months later, after an investigation, the warehouse super was asked, did he have such and such cases for shipment? 'Sure. I was wondering when those things were going to be shipped. Had them around for weeks.'

"Here is another case. Some valuable carloads of crude rubber were shipped inland to a rubber plant. The plant said they never arrived. Investigation showed that the checker at the plant had made a careful count, by his own estimation; he had the proof in the form of a tally sheet. No rubber had been received of the nature specified. A second railroad representative was not satisfied with the evidence and went to work on the checker. He found, first of all, that the original tally had been made on a *shingle*, from which the checker had then copied a more presentable tally sheet.

"Investigation further showed, following upon lengthy analysis, that the production department had used far more rubber than could be accounted for by amount

of crude on hand plus receipts! In other words, the tally had been wrong, and the rubber had been received.

"These were honest mistakes. They happen to railroads and to shippers both. After all, realize that some of these organizations are tremendous, and very responsible jobs are being carried on by new, inexperienced men: laborers. It's true that some more advanced companies have supers and even high executives making periodic checks on what goes on at loading or unloading platforms. But it is physically impossible in many cases to have 100 percent supervision or 100 percent accuracy. Mistakes can be made. Fortunately, both the carriers and the shippers usually understand this and come to an amicable understanding; relatively very few cases go into litigation.

"These case histories raise a few other questions. One: what some companies need is more systematization; note the warehouse case and the consumption of excess rubber. Secondly, more companies are recognizing the fact that a selling job is not completed until the goods hit destination. Third, distribution is still looked upon as a step-child;

companies have engineered production until many plants are so many robots. But distribution, selling, a simple thing like loading—that's something else!

"One last point. The shipper has also got to realize that when losses occur, even if he can prove negligence on the part of the carrier, he can only recover the equivalent of physical losses; if production time and other indirect losses are involved, the carrier is immune. That fact, plus the fact that railroads can generally find something wrong with the checker or the warehouseman or almost anybody and anything in a shipper's organization—and has the investigators to do just that—indicates that shippers should stop taking a beating and do something with selling and packing and loading and shipping. They're the losers.

"That doesn't mean," said McCormack, "that shippers always lose out. In fact some odd cases favorable to shippers, are on record. As an example, I quote from 75 Fed (2d) 494 in which the court said: 'Purchaser of reconsignment bill of lading for value of high grade product shipped under original bills, reconsignment bills having been issued by the carrier after an inferior product had been substituted may recover from the carrier notwithstanding carrier did not know of the substitution and bill recited "shippers' load and count" and "contents and conditions of contents of packages unknown.'" Other judicial findings of like nature could be cited. In addition, I recall an interesting happening which never came to the attention of the courts."

"Let's have it," West requested.

"It had to do with a copper refinery located in New Jersey which produced copper bars of various sizes and weights," McCormack related. "In the main the bars were shipped by railroad in carload lots to wire mills in New England."

McCormack then went on to narrate in more detail. As each car was loaded at the refinery the number of bars in the shipment was triple counted by three checkers, none of which had advance information as to the amount. A foreman stood by to supervise and to match the reports. When every-

OBITUARIES

Andrew J. Brady, freight traffic manager for United Fruit Co., July 3. He was a life member of the New York Traffic Club.

Paul Brautigan, traffic manager of National Van Lines, Inc. He was widely known in the transportation field. Mr. Brautigan was assistant traffic manager of International Harvester Co., in 1922. He became associated with National Van Lines in 1941.

Ezra W. Clark, 68, former vice president, Truck-Tractor Division, Clark Equipment Co., Aug. 10. Mr. Clark was the author of *The Unit Package Method of Material Handling* and many articles and pamphlets on industrial problems.

Marion R. Fitzgibbon, 75, founder and president of the M. R. Fitzgibbon Storage and Moving Co., Mount Vernon, N. Y., July 5. (Vitkauskas)

Fred W. Green, 65, publisher of Green's Great Lakes Directory and a widely known figure in lakes shipping, July 14. He started his ship directory as a small "handy book" while employed by Mitchell & Co., vessel operators and brokers, Cleveland, and developed it gradually until it became one of the most widely used volumes of lake shipping information. (Kline)

John J. Gund, 79, founder and president of Lakewood Storage Co., May 31. Mr. Gund was also president of Knickerbocker Storage Co. and a member of the National Furniture Warehousemen's Assn.

Peter P. Kellner, chief engineer, Great Northern Warehouse Co., Minneapolis, July 28. (Vitkauskas)

Ferris Martin, former secretary of Minnesota-Northwest Warehousemen's Assn., July 5.

C. S. Sampson, 55, president of the Los Angeles Board of Harbor Commissioners and the Pacific Coast Assn. of Port Authorities, July 28.

George W. Sergeant, 83, president of the Emerson Truck & Storage Co., Battle Creek, Mich., June 9. He was a member of the National Furniture Warehousemen's Assn.

Louis H. Tanner, co-partner in the Tanner Moving & Storage Co., Detroit, June 25. Mr. Tanner was a charter member of the Michigan Movers and Warehousemen's Assn. and the second president of that group in 1924. He was also a member of the National Furniture Warehousemen's Assn.

thing was in order he directed the closing and locking of the car doors. He then personally applied metal seals to each door. One of the checkers would immediately write down the seal numbers and compare with the foreman. By this method the refinery management had a complete check on the quantities shipped. Over the years, hundreds of carloads of the copper bars had been consigned to the New England mills without the loss of a single piece while in transit. Beyond any doubt the refinery used as near a perfect system of checking as could be devised.

But, all at once numerous complaints from various consignees were received by the refinery, protesting shortages of two or three bars in every carload. The consignees also reported the cars to be in good condition with the original seals unbroken upon delivery by the railroad. Under the circumstances the refinery filed claims with the railroad. The carrier immediately

rejected every claim, on the basis of the "shipper's load and count" clause in the bills of lading. The refinery was confronted with the seemingly impossible task of proving negligence on the part of the rail carrier. Otherwise it would suffer the loss.

The general manager, the production manager, and the traffic manager of the refinery jointly studied the situation from every angle. At first they made little progress toward solving the problem. Finally one day they tried a test on a particular type of box car, one of which was already loaded and sealed. They found by using a crowbar that it was possible to lift a door at the bottom up and over the door-track without damaging the car. At the same time the seals remained intact. They further noted that a slim person could slither into the car, push out bars of copper and cause them to fall to the ground with only a slight thud. The door, or doors, could then be

replaced in original position with no evidence of the tampering.

The refinery officials were convinced they now had the answer. All six of the thieves were caught and arrested. It was proved that the men who had removed the bars from the cars were yard employees of the railroad. They admitted their guilt, not only in connection with the four cars, but also on all previous shipments on which losses had been reported. As a consequence the refinery was reimbursed by the railroad either by return of such actual bars of copper as were recovered, or by payment of claims.

"So you see," declared McCormack, "the words 'shipper's load and count' in a bill of lading cannot prevent a shipper from collecting a claim for loss against a railroad if he can prove by a preponderance of the evidence the quantity of property loaded into the car and the quantity delivered at destination."¹¹

¹¹ See 218 NW 649 (Mich. Sup. Ct.).

Does "Average" Mean Anything?

"Figures don't lie, but . . ."

SUPPOSE you read somewhere that the average height of American men is 5 ft. 8 in. and that of Italians 5 ft. 5 in. What could you tell, knowing this, about how high Primo Carnera and Joe Louis are? Obviously nothing. That is why statisticians are not amused by the gag that there are liars, damned liars and statisticians.

Putting the problem another way: suppose you earned zero dollars one year and \$50,000 the next, and statistically it could be shown that you averaged \$25,000 each year. So what? The relation between the average and the actual data is very distant so far as any real use can be made of the average. The reason is this: unless the average is close to the actual figures, it is a statistic, pure and simple. If Company Y earned \$100,000 in 1946, \$95,000 in 1947 and \$120,000 in 1948 and averaged \$105,000, then the average would have considerable meaning; the

variation of the actual figures from the average would be small indeed and the average could well represent them.

The above example is important, also, in the fact that \$105,000 could also be the average of \$55,000 and \$155,000 just as well as the figures shown earlier. Averages such as these may be the same, but when applied to market studies, it may be found that the markets producing the same average figure are very different.

Averages should never be accepted without carefully investigating the "bases" for such averages. Market data books showing average or "per capita" income or wealth have gotten many a sales manager into difficulties because he did not look into base figures but took averages at face value.

Suppose you are selling 40 ft. yachts. You investigate and find that your potential market is men with \$50,000 a year incomes. You find that a Chicago suburb has men with an average income of \$52,000

a year. Is this your market? Not necessarily; 90 percent of the men, it turns out on investigation, earned less than \$10,000 yearly; the rest earned so much that they pulled the average way up. The market for yachts was not the whole population but only 10 percent of it.

You may say, "Why, I'd never make a mistake like that." Don't be so sure. The above example was so very simple as to be self-evident; besides, you were prepared for the answer even before you read it. It is amazing to find, even with nationally known companies, that top management fails to see unbalanced operations.

Another example of how averages can fool you. Suppose you find that in 1949 (first half) all truck lines went down five percent in volume carried, and that yours did likewise. Does this justify your own company losing five percent? Not at all. Remember, some truckers did better, some did worse. Some did better because they were better managed. The idea is, don't feel good because you did as well or as poorly as the average. Some of the truckers in that average were not too hot, managerially speaking.

¹² We are indebted to Remington Rand, Inc., New York, for some of the above material.

IT'S UP

(Continued from page 54)

The "Geisler Economy Blank" box is delivered to the customer as a flat sheet which resembles an RSC blank. The novelty of this development, however, is a patent applied for machine which is installed in the shipper's plant and which folds the blank into box form, inserts the contents and closes the lid with a single row of stitches.

Effective April 25, Supplement No. 17 of the Consolidated Freight Classification listed a new Package No. 212 made of V-board with bottom flaps sealed by a patented locking method. This box is permitted for cheese in gross weights not to exceed 15# and is only mentioned here as a new development. A description at this time would be too complicated and the box should be seen to appreciate the method of locking the flaps.

While this resume has made no attempt to cover all of the new developments in fibre containers, it is hoped that it will cause shippers to take another look at their present containers to make sure that they are taking advantage of all of the new technical developments which seem to be coming in at an ever increasing rate. One way to effect this check-up is to ask your box maker to conduct a survey of your present shipping methods. Most of the larger container manufacturers are equipped to do this and to follow up the survey with a complete written report, containing recommendations. There is no doubt that the alert box maker is anxious to provide this service because he realizes that "something old has been added," namely, Competition.

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Coming Events

- Sept. 9-12—Clinic on Maintenance of Industrial Instruments held by Instrument Society of America, Statler Hotel, St. Louis.
- Sept. 15—Southeastern Warehousemen's Assn. Convention, Birmingham, Ala.
- Sept. 18-20—New York State Warehousemen's Assn. Conference, Saranac Lake, N. Y.
- Oct. 3-5—4th Annual Convention, National Defense Transportation Assn., Atlanta-Biltmore Hotel, Atlanta.
- Oct. 4-7—4th Annual Industrial Packaging and Materials Handling Exposition, Convention Hall, Detroit.
- Oct. 5-6—Annual convention Tennessee Motor Transport Association, Andrew Jackson Hotel, Nashville, Tenn.
- Oct. 5-15—Great Britain's first National Packaging Exhibition, Manchester, Eng.
- Oct. 13-15—Southwest Warehousemen's & Transferrers' Assn. Conference, Baker Hotel, Mineral Wells, Texas.
- Oct. 18-19—13th Annual Meeting, National Assn. of Shippers Advisory Boards, St. Louis.
- Oct. 21-26—American Trucking Assns., Inc., annual convention, Statler Hotel, Boston.
- Oct. 24-26—Associated Traffic Clubs of America, Shamrock Hotel, Houston.
- Oct. 24-26—11th Annual Forum Packaging Institute, Hotel Commodore, New York.
- Oct. 24-28—37th National Safety Congress and Exposition, Chicago.
- Oct. 31-Nov. 2—National Foreign Trade Convention sponsored by the National Foreign Trade Council.
- Nov. 14-17—1949 National Beverage Exposition will be held under the auspices of the American Bottlers of Carbonated Beverages at Convention Hall, Detroit.
- Jan. 16-19, 1950—First Plant Maintenance Show and Exposition, Cleveland Auditorium, Cleveland.
- Jan. 22-27, 1950—National Furniture Warehousemen's Association, annual convention, Hotel Del Coronado, Coronado Calif.
- Jan. 24-28, 1950—18th Annual Convention, Mayflower Warehousemen's Assn., Hotel Biltmore, Palm Beach, Fla. Registration Jan. 23.
- Jan. 31-Feb. 3, 1950—American Warehousemen's Association, Edgewater Beach Hotel, Chicago.
- Jan. 31-Feb. 4, 1950—All-Industry Frozen Food Convention, Chicago, correlating with the 1950 Atlantic City convention.
- Apr. 26-27, 1950—3rd Highway Transportation Congress, sponsored by the National Highway Users Conference, Hotel Mayflower, Washington, D. C.
- June, 12-16, 1950—Fourth National Materials Handling Exposition, International Amphitheatre, Chicago.

BOOKS AND CATALOGUES

THE AMERICAN MANAGEMENT ASSN., New York, has released four handbooks, numbered 25 through 28 in its Packaging Series. The respective titles are: "Cost Controls and Packing, Shipping and Warehousing;" "A Primer on Basic Types of Shipping Containers and Interior Packing Pieces;" "Consumer Packaging—Its Technique and Psychology;" and "Specifications for Package Materials and Design." Handbook No. 26 is copiously illustrated, and all four handbooks contain material from very authoritative sources. Among the contributors are S. L. Swenson, Product Engineer, Kimberly-Clark Corp., Walter H. Husted of Isthmian Steamship Lines, W. R. Hummel and A. C. Beardsell, Western Electric Co. and Charles W. Hauck, Professor of Rural Economics, the Ohio State University.

DEVELOPMENT AND ECONOMIC POTENTIAL OF INLAND WATERWAYS TRANSPORTATION—Dravo Corp. Neville Island, Pittsburgh. This is a comprehensive study of inland waterways, and was prepared by Albert J. Dawson and Morris L. Hicks, staff engineers, for presentation before the First Pan-American Engineering Conference at Rio, July, 1949.

The report studies problems in adapting modern river craft to the peculiarities of South American rivers. Besides several charts illustrating the effects of depth of water, on resistance, speed and horsepower, there are numerous illustrations showing towboats in service both domestically and in Latin American countries. Those interested in copies should mention Bulletin No. 224.

FORGED STEEL CASTERS. The Hamilton Caster & Mfg. Co., Hamilton, Ohio, announces a new line of casters of drop-forged

steel. These are illustrated and discussed in new catalogs. These casters are made in extra heavy, heavy duty and regular duty series. Semi-steel, molded plastic, or molded-on rubber-tired wheels are furnished in all models. The extra heavy duty series have 6, 8, or 10 in. wheels, heavy duty casters, 5 or 6 in. wheels, regular duty, 4 or 5 in. wheels. Axles are heavy, high carbon steel, with seamless tube steel spanner bushings and lock nuts. All models have Hyatt-type roller bearings, with seal washers in the wheels. The extra heavy and heavy duty models have Timken thrust bearings. All swivel assemblies and wheel bearings are pressure-lubricated. Complete information is contained in both the special bulletin and in a general caster catalog. Copies will be sent upon request.

THE RONALD PRESS CO., New York, has just issued a revised edition of *Wholesaling, Principles and Practice*, by Beckman and Engle. This authoritative work needs no additional "kudos" since it is well known to the marketing fraternity. Professor Beckman, it may be added, was formerly consulting expert in charge of wholesale distribution, Bureau of the Census, is now with Ohio State University, and is associate author of "Basic Principles of Marketing," another Ronald publication. Professor Engle is director of the Bureau of Business Research, University of Washington.

As may be expected, "Wholesaling" takes in the nature and evolution of wholesaling, modern wholesaling in its many ramifications, operation and management, and economic and governmental aspects of the field. This 746 page book contains both an index of names and an index of subjects, as well as 55 tables and other illustrations.

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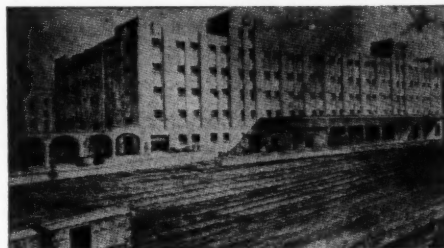
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and Firms are Arranged Alphabetically

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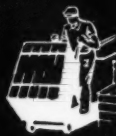
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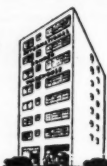
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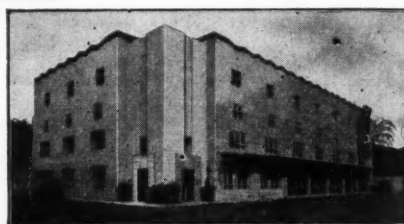
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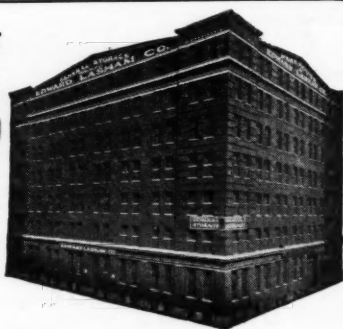
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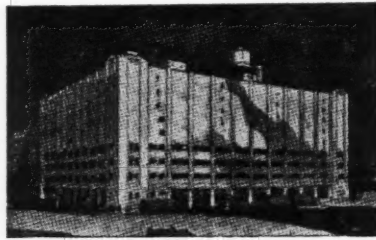


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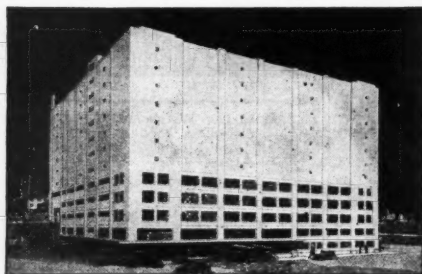
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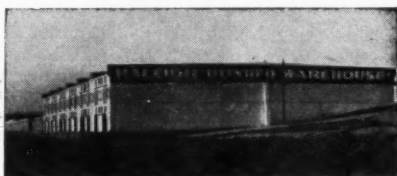
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and Firms are Arranged Alphabetically

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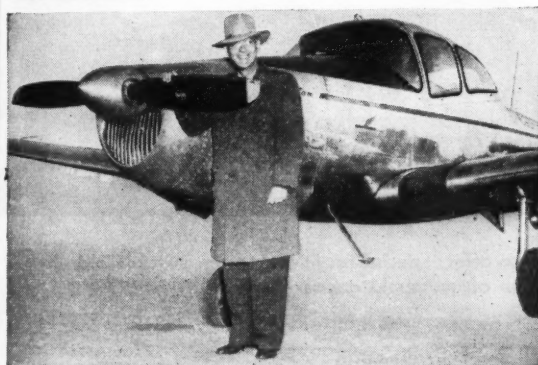
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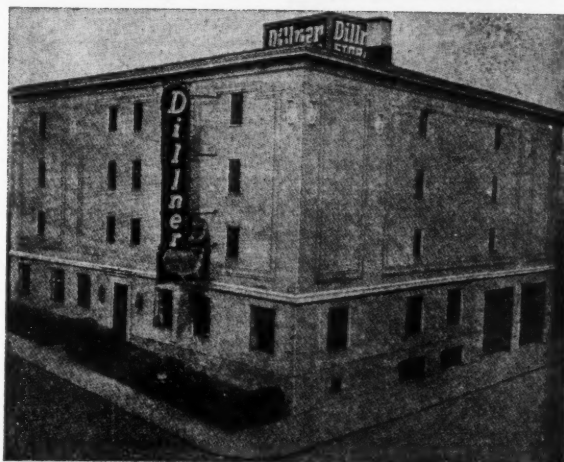
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 Lowest Insurance Rates Automatic Sprinkler Watchman

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Fireproof

Sprinklered

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Over 1,000,000 cubic feet reinforced Concrete Sprinklered Space

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Capacity 500 Cars

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CENTRAL

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COLD STORAGE

DRY STORAGE

FREEZER STORAGE

612 W. Main St., Madison 3

SAVINGS

(Continued from page 35)

possessing comparatively great possibilities.

3. The intangible nature of most distribution decisions, as compared with manufacturing problems, requires as much accurate data as can possibly be made available.

"The task of mapping a distribution plan requires detailed study of the marketing characteristics of the particular product, plus current knowledge of many other facts

about the drug market—facts which are in a constant state of change as they reflect the impact of many other product innovations and competitive efforts. Nearly every such plan is adjusted and perfected—continuously—in line with fluctuating conditions such as:

1. *Changes in the market potential* due to shifts of population or to changes in purchasing power and buying habits, which determine the trend of usage of the product in question.

2. *Competitive shifts within the drug industry*, which involve a con-

tinuous appraisal of all elements of strength or weakness of each brand, and their probable effect on competitive performance. Manufacturers check the distribution status and the sales trend of substitute or semi-competitive commodities regularly, many employing the bimonthly store audit technique to keep themselves fully informed on consumer purchase trends.

3. *Changes in methods*—and effectiveness—of merchandising strategies, involving revisions in trade deals, displays, offers, etc. . . .

Cities

and Firms are Arranged Alphabetically

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Efficient Complete Merchandise
Experienced Warehousing
SPECIALISTS IN POOL CAR DISTRIBUTION
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**MILWAUKEE'S only COMPLETELY
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 • Over 1 1/2 Million Cubic Feet First Floor Space •



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Milwaukee 4
 C. & N.W.R.R. Siding




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General Merchandise Storage
 LOW INSURANCE RATES
 POOL CAR DISTRIBUTION
 Licensed and Bonded. Private Siding Chicago & Northwestern R.R.
 Member Wis. W. A.

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 Established 1885 610 Yonge St., Toronto 5, Can.
 Seven Buildings to Meet All Requirements for Modern Storage
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 Customs Bonded. Pool Car Distribution. Household Goods
 Moved, Packed, Shipped and Stored.
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 200,000 SQ. FT. OF MODERN FIREPROOF SPACE LOCATED
 IN THE EXACT CENTER OF THE CITY
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 LOCAL AND LONG DISTANCE MOVERS
 Private Room System for Storage
 CRATING, PACKING and SHIPPING
 Charges Collected and Promptly Remitted
 Member: N. F. W. A., Can. W. A.




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RAPID-FIRE

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heavy over-loading and other pressures, some secondary packaging would be advisable. The "B" category also took a large load of responsibility off the shoulders of local distributors.

Only "C"-marked containers indicated goods which were to be protected by an outside box. This manufacturer has high hopes of winning more and more of the direct-to-consumer-through-retail-stores market. The correlation of merchandising to distribution had now been achieved. The sales department was no longer faced with the old charge that once the goods were opened for display, it was too much trouble to repack for shipment.

Paint brushes, kitchen utensils and photo-films are typical of the many items for over-the-counter purchase which have developed better merchandising methods through better means of distribution. The examples are not limited to the consumer field. Uniform marking and grading of lumber, mobile concrete mixers, refinements in the availability of aluminum, brass, steel and other metals are examples of the relating of distribution and merchandising in the building and construction field. Similar integration is running between all industry and commerce.

Successful merchandising has been aptly described as "the technique of winning new markets and finding new avenues of distribution while firmly holding on to existing business." Expanding one's trade while letting old customers slip away is like pouring water into a leaking bucket. And doing nothing to bolster one's present volume of business also is inviting disaster. In business, it is said, nothing stands still. An enterprise either goes forward or backward.



ADT BURGLAR ALARM SERVICE

for Complete Automatic Protection



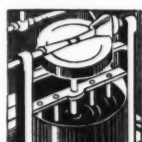
Automatic Fire Detection and Alarm Service



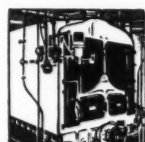
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Burglar Alarm Service



Industrial Process Supervisory Service



Heating System Supervisory Service



Automatic Smoke Detection and Alarm Service



Holdup Alarm Service



Watchman's Reporting Service



Manual Fire Alarm Service

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ADT Services include **CONTINUOUS SUPERVISION • REGULAR INSPECTIONS AND TESTS • COMPLETE MAINTENANCE** • Without these fundamental service features, there can be little assurance that any protective signaling system will function properly when an emergency arises.

#3 in a series presenting the principal ADT Services for the protection of life and property.

ADT

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CENTRAL STATION OFFICES IN ALL PRINCIPAL CITIES OF THE UNITED STATES

Service and Statistics



If you would take the measure of Harborside's advantages, consider first the human equation—the seasoned skill and wide experience, the will to serve, of the key men at Harborside. Here, also, are a few physical facts about the world's greatest rail-water terminal:

- 3,000 employed
- Ground area 8.3 acres
- Floor area 43.5 acres
- Building 320 feet deep—
970 feet long—200 feet high
- Capacity 27,317,246 cubic feet
- Cold storage 4,344,423 cubic feet
- 53 miles of refrigerating pipe
- 26-car placement
- 9 passenger elevators
- 22 freight elevators
- 19,305 sprinkler-heads
- 690 feet river front bulkhead
- 25 feet dockage—mean low tide
- Private police force

HARBORSIDE is directly opposite Cortlandt Street, Manhattan—only five minutes from Holland Tunnel and trunk highways. Direct connections with the Pennsylvania Railroad, and with all other lines and with freighters, by lighterage. Write, wire, or telephone Leo J. Fisher, Vice-President, for information and descriptive folder.

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